

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.075 MGD wastewater treatment plant. This permit action consists of updating the WQS and updating boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Foxcroft School Wastewater Plant  
P. O. Box 5555  
Middleburg, VA 22117  
SIC Code : 4952 WWTP  
  
Facility Location: 22407 Foxhound Road  
Middleburg, VA 22117  
County: Loudoun  
  
Facility Contact Name: Steve Cawthron  
Telephone Number: 540-338-9710
2. Permit No.: VA0024112  
Expiration Date of previous permit: January 19, 2009  
  
Other VPDES Permits associated with this facility: N/A  
Other Permits associated with this facility: N/A  
E2/E3/E4 Status: N/A
3. Owner Name: Foxcroft School  
Owner Contact/Title: Richard Bettencourt, Business Manager  
Telephone Number: (540) 687-5555
4. Application Complete Date: July 14, 2008  
Permit Drafted By: Joan C. Crowther  
Date Drafted: January 5, 2010  
Draft Permit Reviewed By: Alison Thompson  
Date Reviewed: January 8, 2010  
Public Comment Period : Start Date: March 31, 2010  
End Date: April 30, 2010
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination  
Receiving Stream Name : Goose Creek  
Drainage Area at Outfall: 151.63 sq.mi.  
River Mile: 25.98  
Stream Basin: Potomac River  
Subbasin: Potomac River  
Section: 9  
Stream Class: III  
Special Standards: None  
Waterbody ID: VAN-A05R  
7Q10 Low Flow: 0.0 MGD  
7Q10 High Flow: 8.92 MGD  
1Q10 Low Flow: 0.0 MGD  
1Q10 High Flow: 6.85 MGD  
Harmonic Mean Flow: 0.0 MGD  
30Q5 Flow: 1.91 MGD  
303(d) Listed: Yes  
30Q10 Flow: 0.103 MGD  
TMDL Approved: Yes  
Date TMDL Approved: Bacteria TMDL – 10/27/06  
Benthic TMDL – 4/26/04
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:
 

<u>✓</u> State Water Control Law <u>✓</u> Clean Water Act <u>✓</u> VPDES Permit Regulation <u>✓</u> EPA NPDES Regulation	<u>      </u> EPA Guidelines <u>✓</u> Water Quality Standards <u>      </u> Other
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7. Licensed Operator Requirements: Class III

8. Reliability Class: Class II

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

**10. Wastewater Sources and Treatment Description:**

The Foxcroft School Wastewater Treatment Plant consists of a comminutor, back-up bar screen and a splitter box to distribute flow between 2 parallel treatment trains consisting of extended aeration tanks and secondary clarification. The wastewater flow then enters a 225,000 gallon polishing tank with a hold time of approximately 3 days followed by UV disinfection and post aeration.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description				
Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.075 MGD	39° 00' 21" N 77° 44' 38" W
See Attachment 3 for (Lincoln, DEQ #215C) topographic map.				

**11. Sludge Treatment and Disposal Methods:**

The Foxcroft School Wastewater Treatment Plant sludge treat consists of sludge holding tank approximately 15,000 gallons. This tank is not aerated. This tank can hold approximately five months of generated sludge. The tank is pumped quarterly. The sludge is normally hauled to the Loudoun County manhole F-17 located on Route 697 just off of Route 7 in Ashburn, Virginia. Loudoun County Sanitation Authority accepts sludge at this location for ultimate disposal at the Blue Plains Wastewater Treatment Plant in Washington, D.C.

**12. Discharges and Monitoring Stations in Vicinity of Discharge**

TABLE 2	
Identification Number	Description of discharges, DEQ Ambient Water Quality Monitoring in the Vicinity of the Foxcroft School's Discharge
VA0027197	Notre Dame Academy – Discharges into an unnamed tributary to Cedar Run (38° 59' 27" / 77° 47' 21")
1aGOO022.44	Goose Creek - DEQ Ambient Water Quality Monitoring at Route 734 Bridge (39° 00' 48" / 77° 42' 01") Samples collected in 1974 - 2008.

**13. Material Storage:**

There are no chemicals stored on-site.

**14. Site Inspection:** Performed by Sharon Mack on March 21, 2008. (See Attachment 4).**15. Receiving Stream Water Quality and Water Quality Standards:****a) Ambient Water Quality Data**

While there is no monitoring data for the segment of Goose Creek that receives the discharge from Foxcroft School Wastewater Treatment Plant, there is monitoring data on a downstream segment of Goose Creek (VAN-A05R\_GOO01A00). Segment VAN-A05R\_GOO01A00 of Goose Creek extends from the confluence with Wancopin Creek, at river mile 23.46, and continues downstream until the confluence with North Fork Goose Creek, at river mile 16.58. The nearest downstream DEQ monitoring station with ambient data is Station 1AGOO022.44, located on Goose Creek at the Snickersville Turnpike (Route 734) bridge crossing. Station 1AGOO022.44 is located within Segment VAN-A05R\_GOO01A00. Station 1AGOO022.44 is located approximately 3.41 miles downstream from the Foxcroft School WWTP discharge outfall.

The following is a monitoring summary for Segment VAN-A05R\_GOO01A00 as taken from the 2008 Integrated Assessment:

The following sampling stations are located within this stream segment: DEQ ambient and biological station 1AGOO022.44, at Route 734 and citizen monitoring stations 1aGOO-10-SOS and 1aGOO-19-SOS.

Note: Although the fecal coliform bacteria criteria are no longer being used for assessment purposes, there has been insufficient *E. coli* bacteria monitoring along this assessment unit reach. The fecal coliform impairment formerly associated with this assessment unit will remain.

The recreation use is considered not supported, as described above. Biological and associated chemical monitoring indicates that the aquatic life and wildlife uses are fully supporting. Citizen monitoring finds a low probability of adverse conditions for biota. The fish consumption use was not assessed.

For additional information regarding Goose Creek's water quality, please see the Planning Statement, Attachment 5.

**b) Receiving Stream Water Quality Criteria**

Part IX of 9 VAC 25-260 (360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Goose Creek is located within Section 9 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 6 details other water quality criteria applicable to the receiving stream. The water quality criteria spreadsheets were calculated using two seasonal tiers; December – May as the winter tier and June – November as the summer tier.

Ammonia:

Staff has re-evaluated the receiving stream ambient monitoring data and the effluent data for pH and temperature and finds a significant difference from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. The DEQ Ambient Water Quality Monitoring Station's data for the 1aGOO022.44 located approximately 3.41 miles downstream from the facility's discharge point was used to determine the stream's pH and temperature. Data was available from September 1974 through May 2008. Effluent data for the period of November 2003 through October 2009 was reviewed and used to determine the effluent pH value.

The stream data shows that the pH 90<sup>th</sup> percentile is 7.9 SU for both the winter (December –May) and summer (June – November) tiers. The temperature 90<sup>th</sup> percentile is 17°C for the winter and 25°C for the summer. The effluent data indicated that the pH 90<sup>th</sup> percentile is 7.4 SU for the summer and 7.3 SU for the winter. No temperature effluent data was available so the default value of 25°C was used. See Attachment 7 for pH and temperature data.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). The receiving stream average hardness is 50 mg/L for the summer tier and 44 mg/L for the winter tier (Attachment 7). The hardness-dependent metals criteria shown in Attachment 6 are based on this value.

Bacteria Criteria: The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed the following:

	Geometric Mean <sup>1</sup>	Single Sample Maximum
Freshwater <i>E. coli</i> (N/100 ml)	126	235

<sup>1</sup>For two or more samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Goose Creek, is located within Section 9 of the Potomac River Basin. No special standards are designated for this section.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on December 30, 2009 for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. See Attachment 8 for a copy of the database search results.

## 16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.



The receiving stream has been classified as Tier 1 based on an evaluation of the receiving stream having a 7Q10 flow of 0.0 MGD for the summer (June through November) tier. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

#### 17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero for the summer tier, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

##### a) Effluent Screening:

Effluent data obtained from the Discharge Monitoring Reports (November 2003 – October 2009) and the permit application has been reviewed and determined to be suitable for evaluation. There have been no significant exceedances of the established limitations.

The following pollutants require a wasteload allocation analysis: Ammonia.

##### b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:	WLA	= Wasteload allocation
	C <sub>o</sub>	= In-stream water quality criteria
	Q <sub>e</sub>	= Design flow
	Q <sub>s</sub>	= Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for chronic ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
	f	= Decimal fraction of critical flow
	C <sub>s</sub>	= Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD for the summer tier. As such, there is no mixing zone and the WLA is equal to the C<sub>o</sub>. However for the winter tier, there is a mixing zone. Attachment 9 details the mixing analysis results and WLA derivations for these pollutants.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9 VAC 25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a WWTP treating sewage.

c) Effluent Limitations Toxic Pollutants, Outfall 001

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff reevaluated pH and temperature and has concluded it is significantly different than what was used previously to derive ammonia criteria. As result, staff used the new data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new tier ammonia effluent limitations (Attachment 10). The summer tier ammonia monthly average effluent limitations based on this evaluation indicated that the limitation needed to meet water quality standards would be 12.5 mg/L. The existing ammonia monthly average permit limitation is 3.3 mg/L. Because the facility has shown

that it can be operated to meet the 3.3 mg/L, existing ammonia limitation are proposed to continue in the reissued permit (Attachment 11). The previous permit reissuance ammonia calculations determined that no ammonia effluent limitations would be required. This was confirmed during this permit reissuance ammonia calculations.

DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

2) **Metals/Organics:**

No metals or organics data were required for submittal for this permit reissuance due to the design flow of the facility. Only those facilities with a design flow of equal to or greater than 1 MGD are required to provide metals and organic data. Therefore; no metals or organics effluent limitations are being incorporated into the permit.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD<sub>5</sub>), total suspended solids (TSS), and pH limitations are proposed.

Dissolved Oxygen and BOD<sub>5</sub> effluent limitations are on best professional judgement and past stream modeling. The previous permit reissuance's fact sheet dated December 12, 2003 stated that a copy of the stream model was not available.

It is staff's practice to equate the Total Suspended Solids limits with the BOD<sub>5</sub> limits. TSS limits are established to equal BOD<sub>5</sub> limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

*E. coli* limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, BOD<sub>5</sub>, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, and *E.coli* bacteria.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9 VAC 25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

**18. Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

**19. Effluent Limitations/Monitoring Requirements:**

Design flow is 0.075MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD <sub>5</sub>	3	16 mg/L 4.5 kg/day	16 mg/L 4.5 kg/day	NA	NA	1/W	4H-C
Total Suspended Solids (TSS)	2	16 mg/L 4.5 kg/day	16 mg/L 4.5 kg/day	NA	NA	1/W	4H-C
DO	3	NA	NA	5.0 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L) (June – Nov)	3	3.3 mg/L	4.8 mg/L	NA	NA	1/W	4H-C
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls	NA	NA	NA	1/W	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards

*MGD* = Million gallons per day.*NA* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.*TIRE* = Totalizing, indicating and recording equipment.*1/D* = Once every day.*1/W* = Once every week.

*4H-C* = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum four (4) grab samples obtained at hourly or smaller intervals may be collected. Where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by  $\geq 10\%$  or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

**20. Other Permit Requirements:**

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

**21. Other Special Conditions:**

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.
- b) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Within 90 days of the effective date of this permit, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

- c) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.
- d) Reliability Class. The Sewage Collection and Treatment Regulations at 9 VAC 25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a Reliability Class of II
- e) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- f) Treatment Works Closure Plan. The State Water Control Law §62.1-44.15:1.1, makes it illegal for an owner to cease operation and fail to implement a closure plan when failure to implement the plan would result in harm to human health or the environment. This condition is used to notify the owner of the need for a closure plan where a facility is being replaced or is expected to close.
- g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- h) Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA.
- i) Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

**23. Changes to the Permit from the Previously Issued Permit:**

- a) Special Conditions:
  - 1) Indirect Discharges Special Condition was removed due to the fact that the wastewater is only generated by the school and there are no other sources of wastewater.
  - 2) Outfall 001 Monitoring Special Condition was removed.
- b) Monitoring and Effluent Limitations:
  - 1) Fecal Coliform monitoring and effluent limitation was removed.

**24. Variances/Alternate Limits or Conditions:**

There are no variances or alternate limitations or conditions in this permit reissuance.

**25. Public Notice Information:**

First Public Notice Date: March 31, 2010

Second Public Notice Date: April 7, 2010

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 12 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

**26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):**

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

This facility discharges directly to Goose Creek. The stream segment receiving the effluent is listed for non attainment of *E.coli* bacteria and benthics in part I of the current approved 303(d) list. A fecal coliform TMDL for the Goose Creek watershed was developed and approved by the U.S. EPA on May 1, 2003. The SWCB approved the TMDL on June 17, 2004. This TMDL explicitly included segment VAN-A08R\_GOO01A00. This TMDL was modified, and then re-approved by EPA on 10/27/2006. The purpose of the modification was to include a growth allocation for the future expansion of point source dischargers. The modification also included allocations in terms of *E. coli* bacteria. The original TMDL gave VA0024112 an allocation of 2.08E+11 cfu/year of Fecal Coliform bacteria. The TMDL modification provided an allocation for this facility in terms of *E. coli* 1.31E+11 cfu/year. A benthic TMDL for the Goose Creek watershed was approved by the U.S. EPA on April 26, 2004. The SWCB approved the TMDL on August 31, 2004. The TMDL Report concluded that sediment loads in excess of those found in reference streams are the cause of macroinvertebrate impairment in Goose Creek. Sources of sediment in Goose Creek are streambank erosion, erosion from pasture, and erosion from crops and construction sites. The facility was given a WLA for TSS (9.0 tons/year). This permit has limits of 126 n/100 mLs and 16 mg/L (4.5 kg/d) for *E.coli* and TSS; respectively, that are in compliance with the TMDL.

The fish consumption use is also categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. Additionally, there were exceedances of the water quality criterion based tissue screening value (TV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in American eel (2004) and of the risk-based tissue screening value (TSV) of 72 ppb for arsenic (As) in redbreast sunfish (2004) and 300 ppb for mercury (Hg) in smallmouth bass (2004). These exceedances are noted by observed effects. The PCB TMDL for stream segments VAN-A08L\_GOO02A02 and VAN-A08R\_GOO01A00 are scheduled for 2018.

**27. Additional Comments:**

Previous Board Action(s): None.

Staff Comments: The delay of this permit reissuance was due to staff workload and attention given to enforcement issues.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 13.

Foxcroft School Wastewater Treatment Plant  
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Memo dated June 15, 1998
2	Facility Diagram
3	USGS Topographic Map – Lincoln, 215C
4	Site Inspection Report dated March 21, 2008 by Sharon Mack, DEQ-NRO Water Inspector
5	Planning Statement for Foxcroft School, dated November 4, 2009
6	Freshwater Water Quality Criteria/ Wasteload Allocated Analysis dated January 5, 2010
7	Monthly Maximum Effluent pH data November 2003 through October 2009; Goose Creek pH, Temperature, and Hardness data September 1974-May 2008
8	DGIF Threatened and Endangered Species Database Search dated December 30, 2009
9	Mixing Zone Prediction for Foxcroft School
10	2010 Permit Reissuance Ammonia Effluent Calculation dated January 13, 2009
11	2003 Permit Reissuance Ammonia Effluent Calculations dated December 11, 2003
12	Public Notice
13	EPA Checklist dated January 5, 2010



MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
 Water Quality Assessments and Planning  
 629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination  
 Foxcroft School STP - VA#0024112

TO: Doug Stockman, NRO

FROM: Paul E. Herman, P.E., WQAP *Paul*

DATE: June 15, 1998

COPIES: Ron Gregory, Charles Martin, File

RECEIVED

JUN 16 1998

Northern VA. Region  
 Dept. of Env. Quality

This memo supercedes my September 20, 1993 memo to Ray Jay concerning the subject VPDES permit.

The Foxcroft School STP discharges to the Goose Creek near Leithtown, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The VDEQ operated a continuous record gage on the Goose Creek near Middleburg, VA (#01643700) from 1965 to 1967 and from 1969 to 1996. The gage was located upstream of the discharge point at the Route 611 bridge in Loudoun County, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

**Goose Creek near Middleburg, VA (#01643700):**

Drainage Area = 123 mi <sup>2</sup>	
1Q10 = 0.0 cfs	High Flow 1Q10 = 8.6 cfs
7Q10 = 0.004 cfs	High Flow 7Q10 = 11.2 cfs
30Q5 = 1.55 cfs	HM = 0.0 cfs

**Goose Creek at outfall:**

Drainage Area = 151.63 mi <sup>2</sup>	
1Q10 = 0.0 cfs	High Flow 1Q10 = 10.6 cfs 6.85
7Q10 = 0.005 cfs 0.0	High Flow 7Q10 = 13.8 cfs 8.92
30Q5 = 1.91 cfs 1.23	HM = 0.0 cfs

The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

Addendum to Interoffice Memorandum "Flow Frequency Determination, Foxcroft School STP – VA#0024112 dated June 15, 1998 from Paul Herman to Doug Stockman.

Date: January 13, 2010

From: Joan C. Crowther

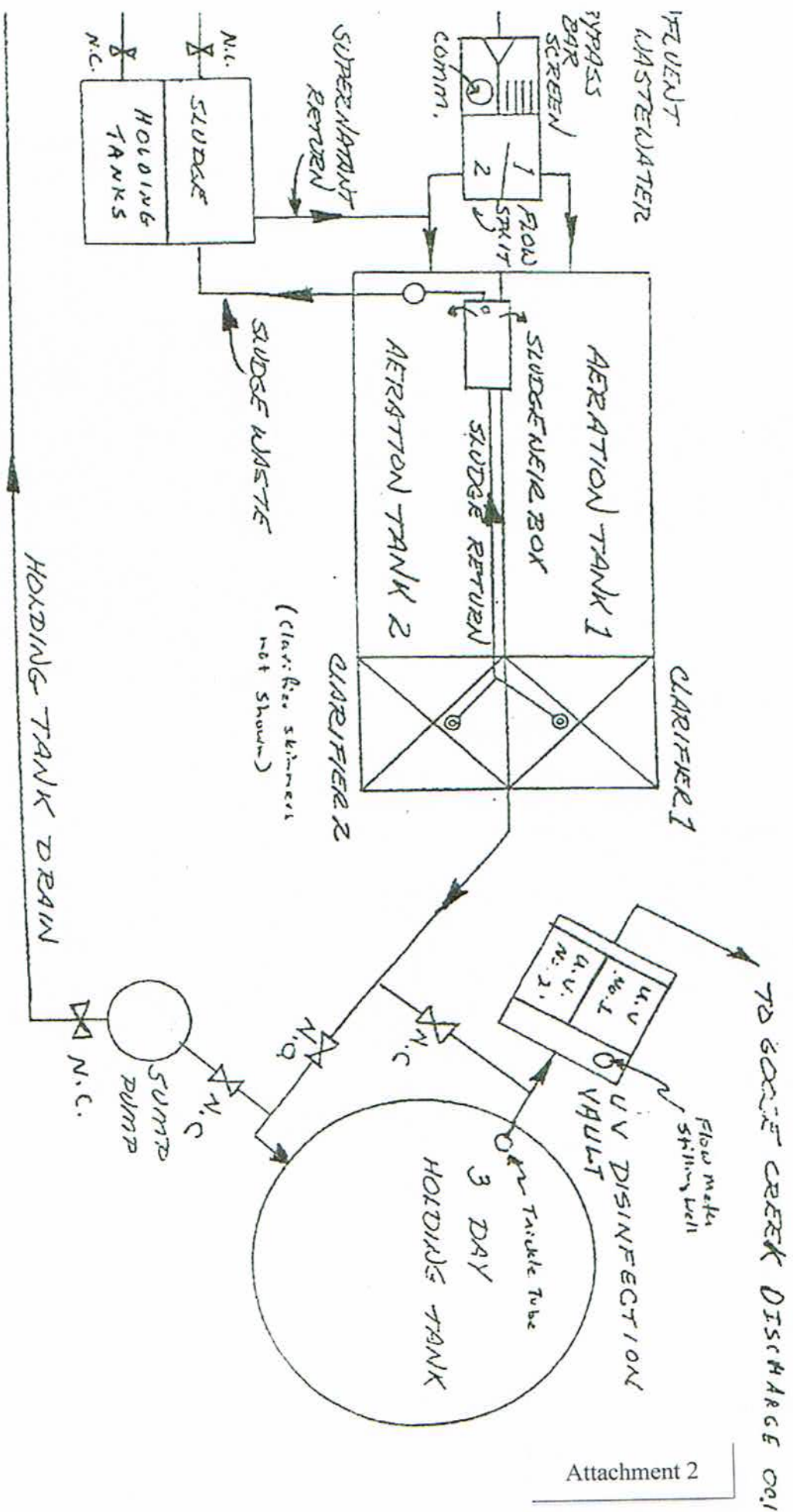
Based on Goose Creek stream data collected during this timeframe 1965-67, 1969-96, 2001-2006, the Goose Creek stream flow at the outfall as been recalculated as follows:

Goose Creek (01643700) Drainage Area 123 mi<sup>2</sup> High flows months are December – May.

	cfs	MGD		cfs	MGD
7Q10	0.02	0.13	High Flow 7Q10	6.7	4.3
1Q10	0.00	0.00	High 1Q10	5.6	3.62
30Q5	0.6	0.39			
30Q10	0.13	0.08	High 30Q10	11	7.1
HM	0.00	0.00			

Goose Creek at Outfall – Drainage Area 151.63 mi<sup>2</sup>

	cfs	MGD		cfs	MGD
7Q10	0.025	0.13	High Flow 7Q10	8.23	5.32
1Q10	0.00	0.00	High 1Q10	6.9	4.46
30Q5	0.74	0.48			
30Q10	0.16	0.10	High 30Q10	13.56	8.8
HM	0.00	0.00			



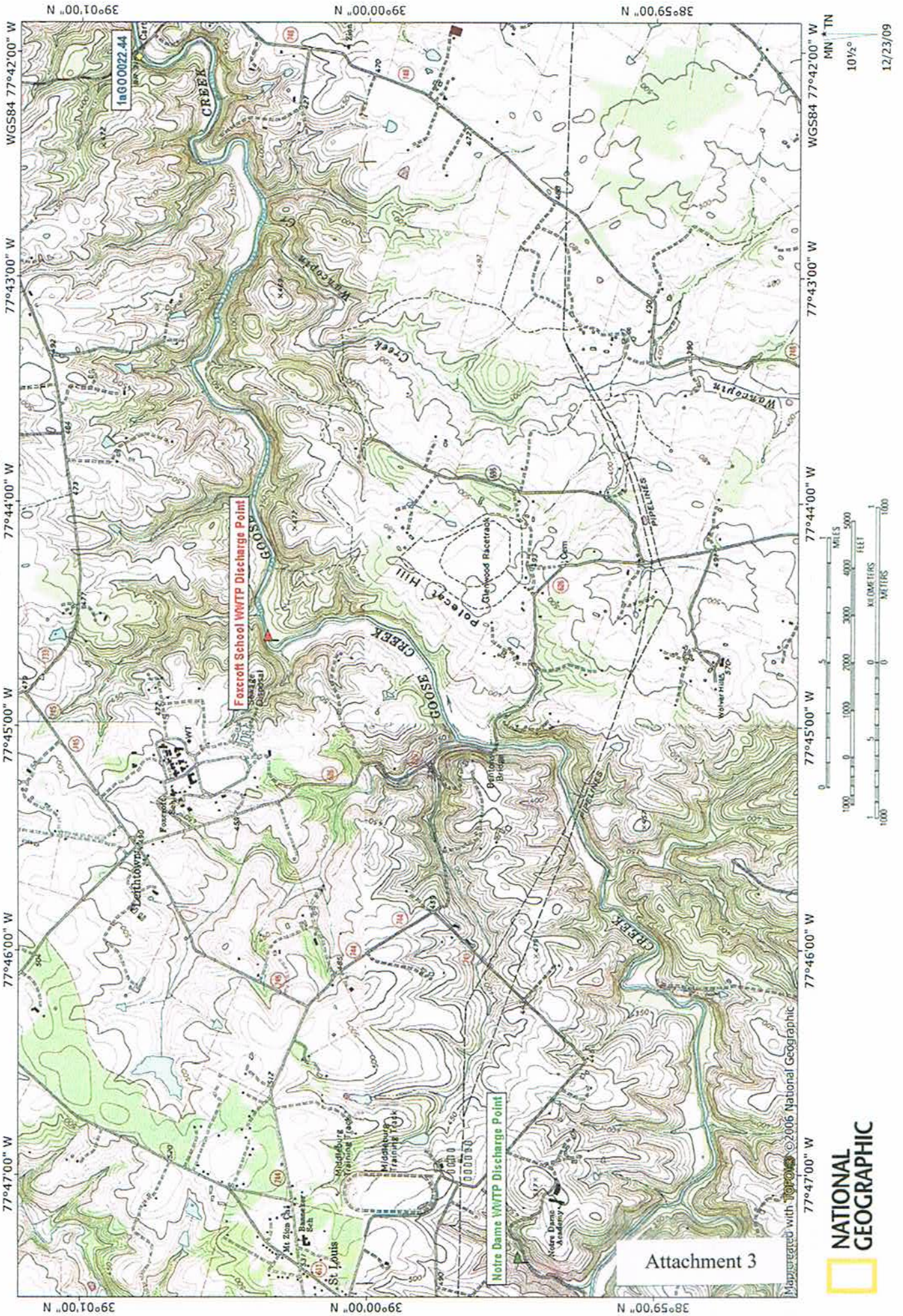
Attachment 2

# PROCESS FLOW DIAGRAM

VLLY, SD  
 RAISED JAN, '92  
 REVISED MAR, 1998



Foxcroft School Wastewater Treatment Plant 12 23 09







# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY*

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3801

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Preston Bryant  
Secretary of Natural Resources

David K. Paylor  
Director

Thomas A. Faha  
Regional Director

April 22, 2008

Richard Bettencourt  
Business Manager  
P.O. Box 5555  
Middleburg, VA, 20118

**Re: Foxcroft School STP, Permit #VA0024112**

Dear Mr. Bettencourt:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at Foxcroft School – Sewage Treatment Plant (STP) on March 21, 2008. The compliance staff would like to thank Steve Cawthron and Charlie Triplett for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had Deficiencies for the laboratory inspection. Please submit in writing a progress report to this office by May 21, 2008 for the items addressed. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm that the facility is in compliance with permit requirements.

Attachment 4

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3882 or by E-mail at [smmack@deq.virginia.gov](mailto:smmack@deq.virginia.gov).

Sincerely,

A handwritten signature in cursive script that reads "Sharon Mack". The ink is dark and the signature is fluid.

Sharon Mack  
Environmental Specialist II

cc: Permits / DMR File, Compliance Manager  
Compliance Inspector, Compliance Auditor  
Steve Stell - OWCP  
Steve Cawthron - Apex, Inc.

DEQ  
WASTEWATER FACILITY INSPECTION REPORT  
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
<b>VA0024112</b>	<b>January 20, 2004</b>		<b>January 19, 2009</b>
Facility Name	Address		Telephone Number
<b>Foxcroft School STP</b>	<b>22407 Foxhound Lane Middleburg, VA</b>		<b>(540)687-5555</b>
Owner Name	Address		Telephone Number
<b>Foxcroft School</b>	<b>P.O. Box 5555 Middleburg, Virginia 20118</b>		<b>(540)687-5555</b>
Responsible Official	Title		Telephone Number
<b>Richard Bettencourt</b>	<b>Business Manager</b>		<b>540-687-4401</b>
Responsible Operator	Operator Cert. Class/number		Telephone Number
<b>Steve Cawthron</b>	<b>Class 1; 1909000301</b>		<b>(703) 737-7091</b>

TYPE OF FACILITY:

DOMESTIC				INDUSTRIAL			
Federal		Major		Major		Primary	
Non-federal	<b>X</b>	Minor	<b>X</b>	Minor		Secondary	

INFLUENT CHARACTERISTICS:

DESIGN:

	Flow	<b>0.075 MGD</b>	
	Population Served	<b>~ 300 (varies w/ the school year)</b>	
	Connections Served	<b>48</b>	

EFFLUENT LIMITS:

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
<b>Flow, MGD</b>		<b>NL</b>	<b>NA</b>	<b>DO, mg/L</b>	<b>5.0</b>		
<b>pH, s.u.</b>	<b>6.0</b>		<b>9.0</b>	<b>TSS, mg/l</b>		<b>16</b>	<b>24</b>
<b>BOD5, mg/L</b>		<b>16</b>	<b>24</b>	<b>Ammonia-N (June – Nov) mg/L</b>		<b>3.3</b>	<b>4.8</b>
<b>E. coli, n/100 ml</b>		<b>126</b>					

	Receiving Stream	<b>Goose Creek</b>	
	Basin	<b>Potomac River</b>	
	Discharge Point (LAT)	<b>39° 00' 30"</b>	
	Discharge Point (LONG)	<b>77° 45' 00"</b>	



**DEQ  
WASTEWATER FACILITY  
INSPECTION REPORT  
PART 1**

Inspection date: **March 21, 2008** Date form completed: **April 21, 2008**  
 Inspection by: **Sharon Mack** Inspection agency: **DEQ NRO**  
 Time spent: **20 hrs** Announced: **Yes**  
 Reviewed by: Scheduled: **Yes**  
 Present at inspection: **Steve Cawthron, Charlie Triplett – Apex, Inc**

## TYPE OF FACILITY:

**Domestic****Industrial**

☐ Federal ☐ Major  
☒ Nonfederal ☒ Minor

☐ Major ☐ Primary  
☐ Minor ☐ Secondary

## Type of inspection:

☒ Routine  
☐ Compliance/Assistance/Complaint  
☐ Reinspection

Date of last inspection: **September 18, 2002**  
 Agency: **DEQ NRO**

Population served: approx. **300** Connections served: approx. **48**

Last month average: (Effluent) **February 2008:**

Flow:	<b>.01998</b>	MGD	pH:	<b>6.9</b>	s.u.	DO	<b>8.6</b>	mg/L
TSS	<b>13</b>	mg/L	BOD <sub>5</sub>	<b>2</b>	mg/L	E. coli	<b>&lt;2</b>	per 100 ml

Quarter average: (Effluent) **Dec 2007, Jan-Feb 2008**

Flow:	<b>0.0141</b>	MGD	pH:	<b>7.9</b>	s.u.	DO	<b>9.5</b>	mg/L
TSS	<b>11.3</b>	mg/L	BOD <sub>5</sub>	<b>2.1</b>	mg/L	E. coli	<b>&lt;2</b>	per 100 ml

DATA VERIFIED IN PREFACE

☒ Updated☐ No changes

Has there been any new construction?

☐ Yes☒ No

If yes, were plans and specifications approved?

☐ Yes☐ No☒ NADEQ approval date: **NA**



**(A) PLANT OPERATION AND MAINTENANCE**

1. Class and number of licensed operators: I 1 II 1 III    IV    Trainee
2. Hours per day plant is manned: **1-2 hours per day (water and WW systems),  
7 days per week**
3. Describe adequacy of staffing. ☐ Good ☒ Average ☐ Poor
4. Does the plant have an established program for training personnel? ☒ Yes ☐ No
5. Describe the adequacy of the training program. ☐ Good ☒ Average ☐ Poor
6. Are preventive maintenance tasks scheduled? ☒ Yes ☐ No
7. Describe the adequacy of maintenance. ☒ Good ☐ Average ☐ Poor\*
8. Does the plant experience any organic/hydraulic overloading?  
If yes, identify cause and impact on plant: **See comments**
9. Any bypassing since last inspection? ☐ Yes ☒ No
10. Is the standby electric generator operational? ☒ Yes ☐ No\* ☐ NA
11. Is the STP alarm system operational? ☐ Yes ☐ No\* ☒ NA
12. How often is the standby generator exercised? **1-2 times monthly. This was being done twice a month  
by a member of the school maintenance staff who recently passed away- there has been some  
schedule upset as a result.**  
  
Power Transfer Switch? **1-2 times monthly**  
Alarm System? **NA**
13. When was the cross connection control device last tested on the potable water service? **October 19, 2007**
14. Is sludge being disposed in accordance with the approved sludge disposal plan?  
☒ Yes ☐ No ☐ NA
15. Is septage received by the facility? ☐ Yes ☒ No  
Is septage loading controlled? ☐ Yes ☐ No ☒ NA  
Are records maintained? ☐ Yes ☐ No ☒ NA
16. Overall appearance of facility: ☒ Good ☐ Average ☐ Poor

Comments:

- 8. Inflow & Infiltration (I&I) has been a problem in the past. The facility does have an I&I rehabilitation plan that has been approved by the DEQ. The plan schedule is being modified due to budgetary concerns at the school; the new schedule will be sent to the NRO by April 21<sup>st</sup>.**

**(B) PLANT RECORDS**

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Instrument maintenance and calibration	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Mechanical equipment maintenance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Industrial waste contribution (Municipal Facilities)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA

2. What does the operational log contain?

<input checked="" type="checkbox"/> Visual observations	<input checked="" type="checkbox"/> Flow measurement
<input checked="" type="checkbox"/> Laboratory results	<input checked="" type="checkbox"/> Process adjustments
<input checked="" type="checkbox"/> Control calculations	<input type="checkbox"/> Other (specify)

Comments:

3. What do the mechanical equipment records contain?

<input checked="" type="checkbox"/> As built plans and specs	<input checked="" type="checkbox"/> Spare parts inventory
<input checked="" type="checkbox"/> Manufacturers instructions	<input checked="" type="checkbox"/> Equipment/parts suppliers
<input type="checkbox"/> Lubrication schedules	<input type="checkbox"/> Other (specify)

Comments:

4. What do the industrial waste contribution records contain?
- NA**
- 
- (Municipal Only)

<input type="checkbox"/> Waste characteristics	<input type="checkbox"/> Locations and discharge types
<input type="checkbox"/> Impact on plant	<input type="checkbox"/> Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

<input checked="" type="checkbox"/> Equipment maintenance records	<input checked="" type="checkbox"/> Operational Log
<input type="checkbox"/> Industrial contributor records	<input checked="" type="checkbox"/> Instrumentation records
<input checked="" type="checkbox"/> Sampling and testing records	

6. Records not normally available to plant personnel and their location:
- None**

7. Were the records reviewed during the inspection?
- ☒
- Yes
- ☐
- No

8. Are the records adequate and the O & M Manual current?
- ☒
- Yes
- ☐
- No

9. Are the records maintained for the required 3-year time period?
- ☒
- Yes
- ☐
- No

Comments:

**8. The O&M was revised in October 2006 and approved by DEQ on May 11, 2007.**

**(C) SAMPLING**

1. Do sampling locations appear to be capable of providing representative samples? ☒ Yes [ ] No\*
2. Do sample types correspond to those required by the VPDES permit? ☒ Yes [ ] No\*
3. Do sampling frequencies correspond to those required by the VPDES permit? ☒ Yes [ ] No\*
4. Are composite samples collected in proportion to flow? ☒ Yes [ ] No\* [ ] NA
5. Are composite samples refrigerated during collection? ☒ Yes [ ] No\* [ ] NA
6. Does plant maintain required records of sampling? ☒ Yes [ ] No\*
7. Does plant run operational control tests? ☒ Yes [ ] No

Comments:

**(D) TESTING**

1. Who performs the testing? ☒ Plant DO, pH [ ] Central Lab ☒ Commercial Lab

Name:

**ESS- Ammonia-N, CBOD<sub>5</sub>, TSS, E. coli****If plant performs any testing, complete 2-4.**

2. What method is used for chlorine analysis? **NA- system has UV disinfection**
3. Does plant appear to have sufficient equipment to perform required tests? ☒ Yes [ ] No\*
4. Does testing equipment appear to be clean and/or operable? ☒ Yes [ ] No\*

Comments:

**(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY**

1. Is the production process as described in the permit application? (If no, describe changes in comments)  
[ ] Yes [ ] No ☒ NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)  
[ ] Yes [ ] No ☒ NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:  
[ ] Yes [ ] No\* ☒ NA

Comments:



Problems identified at last inspection: **Sept 18, 2002**

	Corrected	Not Corrected
1. The final effluent meter has an expired calibration certification	[X]	[ ]
2. O&M Manual needs to be updated to reflect the current operations scheme	[X]	[ ]
3. Solids removal efficiency of the process units preceding the UV disinfection tank need to be evaluated.	[X]	[ ]
4. The UV disinfection system needs to be repaired so that each of the two assemblies are capable of functioning independently.	[X]	[ ]

**SUMMARY for March 21, 2008****Comments:**

- **Overall appearance of this plant is much better than during permit site inspections of October 2003 and January 2004. The plant has been repainted and repairs made to grating and catwalks., grounds maintenance is good.**
- **The three day tank (225,000 gallon capacity) is out of service and the current O&M manual reflects that this is now to be used only as an "emergency tank" between the clarifier and UV.**
- **The exposed section of discharge pipe seen during the January 2004 permit reissuance site inspection was repaired and buried as of Aug 8, 2004.**
- **The UV disinfection system is scheduled for replacement in June/July of this year (2008) in accordance with the construction plan and schedule developed as part of the Special Order by Consent agreement effective Sept. 11, 2006.**

**Recommendations for action:**

- **The DEQ compliance section has no objection if the facility staff wishes to investigate the use of the three day tank as an EQ basin for I&I incidents. However, staff should check with DEQ's Office of Wastewater Engineering before beginning changes on whether plans and specs for the piping changes would have to be approved under the SCAT regulations.**

**UNIT PROCESS: Screening/Comminution**

- |    |  |         |  |   |  |
|----|--|---------|--|---|--|
| 1. | Number of Units:                                 | Manual: | <b>1</b>                                 | Mechanical:                             | <b>1</b>                               |
|    | Number in operation:                             | Manual: | <b>0</b>                                 | Mechanical:                             | <b>1</b>                               |
| 2. | Bypass channel provided:                         |         | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
|    | Bypass channel in use:                           |         | <input type="checkbox"/> Yes             | <input checked="" type="checkbox"/> No  |  |
| 3. | Area adequately ventilated:                      |         | <input checked="" type="checkbox"/> Yes  | <input type="checkbox"/> No*            |  |
| 4. | Alarm system for equipment failure or overloads: |         | <input type="checkbox"/> Yes             | <input checked="" type="checkbox"/> No* |  |
| 5. | Proper flow distribution between units:          |         | <input type="checkbox"/> Yes             | <input type="checkbox"/> No             | <input checked="" type="checkbox"/> NA |
| 6. | How often are units checked and cleaned?         |         | <b>Daily</b>                             |   |  |
| 7. | Cycle of operation:                              |         | <b>Continuous</b>                        |   |  |
| 8. | Volume of screenings removed:                    |         | <b>One pound per day</b>                 |   |  |
| 9. | General condition:                               |         | <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Fair           | <input type="checkbox"/> Poor          |

Comments:

- **Grit settles out in the aeration basins/clarifiers and is collected in the sludge holding tank.**
- **Influent flow at time of inspection was about 13,000 gpd- the students were out on spring break.**
- **Lime may be added at either the comminutor or the aeration basin for pH adjustment.**
- **A new walkway between Sludge Holding Tank and the aeration basins has been installed.**

**UNIT PROCESS: Activated Sludge Aeration**

1. Number of units: **2** In operation: **2**
2. Mode of operation: **Extended aeration**
3. Proper flow distribution between units: ☒ Yes ☐ No\* ☐ NA
4. Foam control operational: ☐ Yes ☐ No\* ☒ NA
5. Scum control operational: ☐ Yes ☐ No\* ☒ NA
6. Evidence of following problems:
- |                                   |                               |  |
|-----------------------------------|-------------------------------|--|
| a. dead spots                     | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| b. excessive foam                 | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| c. poor aeration                  | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| d. excessive aeration             | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| e. excessive scum                 | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| f. aeration equipment malfunction | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
| g. other (identify in comments)   | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |
7. Mixed liquor characteristics (as available):
- |                | Basin 1             | Basin 2          |
|----------------|---------------------|------------------|
| pH:            | <b>6.4 s.u.</b>     | <b>6.7 s.u.</b>  |
| MLSS:          | <b>See comments</b> |                  |
| DO:            | <b>6.0 mg/L</b>     | <b>10.0 mg/L</b> |
| Color:         | <b>Dark brown</b>   |                  |
| Odor:          | <b>Earthy</b>       |                  |
| Settleability: | <b>225 ml/L</b>     | <b>175 ml/L</b>  |
8. Return/waste sludge:
- A. Return Rate: **Not measured: 100 % or better based on visual assessment of flows.**
- b. Waste Rate: **Not metered- 5-15 minutes at a time.**
- c. Frequency of Wasting: **As needed- usually once per week in warmer months; less often in cooler weather.**
9. Aeration system control: ☐ Time Clock ☒ Manual ☐ Continuous ☐ Other (explain)
10. Effluent control devices working properly (oxidation ditches): ☐ Yes ☐ No\* ☒ NA
11. General condition: ☒ Good ☐ Fair ☐ Poor

Comments:

**7. MLSS usually done once per month but has not been done for the past 2 months. Samples must be taken off site to run the analysis- facility does not have equipment to run on-site.**

**8. The goal of wasting is to keep the sludge blanket at about 1 ft in the clarifiers.**

➤ **The technical inspection report of Sept. 2002 notes that one aeration basin had been taken off line & used a sludge holding tank. Both Aeration basins are again used as aeration basins.**

➤ **Plant has 2 blowers with different capacities- currently running blower # 2**



**UNIT PROCESS: Sedimentation**[ ] Primary    **[X]** Secondary    [ ] Tertiary

- |  |          |                       |               |          |
|--|----------|-----------------------|---------------|----------|
| 1. Number of units:                                    | <b>2</b> | In operation:         | <b>2</b>      |          |
| 2. Proper flow distribution between units:             |          | <b>[X]</b> Yes        | [ ] No*       | [ ] NA   |
| 3. Signs of short circuiting and/or overloads:         |          | [ ] Yes               | <b>[X]</b> No |          |
| 4. Effluent weirs level:                               |          | <b>[X]</b> Yes        | [ ] No*       |          |
| Clean:   |          | [ ] Yes               | [ ] No*       |          |
| 5. Scum collection system working properly:            |          | <b>[X]</b> Yes        | [ ] No*       | [ ] NA   |
| 6. Sludge collection system working properly:          |          | <b>[X]</b> Yes        | [ ] No*       |          |
| 7. Influent, effluent baffle systems working properly: |          | <b>[X]</b> Yes        | [ ] No*       |          |
| 8. Chemical addition:                                  |          | [ ] Yes               | <b>[X]</b> No |          |
| Chemicals:   |          | <b>NA</b>             |               |          |
| 9. Effluent characteristics:                           |          | <b>slightly murky</b> |               |          |
| 10. General condition:                                 |          | <b>[X]</b> Good       | [ ] Fair      | [ ] Poor |

Comments:

- 4. Two sump pumps have been installed at the effluent channels to aid in cleaning, "power wash", the weirs. Water is sent back to the head of the clarifiers. The cleaning process was demonstrated during this inspection.**

**UNIT PROCESS: Flow Measurement**

☐ Influent    ☐ Intermediate    ☒ Effluent

1. Type measuring device: **Ultrasonic transducer**
2. Present reading: **0.011 MGD @ 1030**
3. Bypass channel: ☐ Yes    ☒ No  
     Metered: ☐ Yes    ☐ No    ☒ NA
4. Return flows discharged upstream from meter: ☐ Yes    ☒ No  
     Identify: **NA**
5. Device operating properly: ☒ Yes    ☐ No\*
6. Date of last calibration: **July 3, 2007.**
7. Evidence of following problems:
  - a. obstructions ☐ Yes\*    ☒ No
  - b. grease ☐ Yes\*    ☒ No
8. General condition: ☒ Good    ☐ Fair    ☐ Poor

Comments:

**1. Located just prior to the UV system.**



**UNIT PROCESS: Ultraviolet (UV) Disinfection**

- |  |  |   |                               |
|--|--|---|-------------------------------|
| 1. Number of UV lamps/assemblies:                                  | <b>2</b>                                       | In operation:                           | <b>2</b>                      |
| 2. Type of UV system and design dosage:                            | <b>Trojan 2000</b>                             |   |                               |
| 3. Proper flow distribution between units:                         | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            | <input type="checkbox"/> NA   |
| 4. Method of UV intensity monitoring:                              | <b>intensity meters</b>                        |   |                               |
| 5. Adequate ventilation of ballast control boxes:                  | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            | <input type="checkbox"/> NA   |
| 6. Indication of on/off status of all lamps provided:              | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| 7. Lamp assemblies easily removed for maintenance:                 | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| 8. Records of lamp operating hours and replacement dates provided: | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| 9. Routine cleaning system provided:                               | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| Operate properly:  | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| Frequency of routine cleaning:                                     | <b>daily- cleaned w/Lime away every Friday</b> |   |                               |
| 10. Lamp energy control system operate properly:                   | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| 11. Date of last system overhaul:                                  | <b>March 2008</b>                              |   |                               |
| a. UV unit completely drained                                      | <input type="checkbox"/> Yes                   | <input type="checkbox"/> No*            |                               |
| b. all surfaces cleaned  | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| c. UV transmissibility checked                                     | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| d. output of selected lamps checked                                | <input type="checkbox"/> Yes                   | <input checked="" type="checkbox"/> No* |                               |
| e. output of tested lamps  | <b>NA</b>                                      |   |                               |
| f. total operating hours, oldest lamp/assembly                     | <b>Unknown</b>                                 |   |                               |
| g. number of spare lamps and ballasts available:                   | <b>10</b> lamps:                               | ballasts:                               | <b>2</b>                      |
| 12. UV protective eyeglasses provided:                             | <input checked="" type="checkbox"/> Yes        | <input type="checkbox"/> No*            |                               |
| 13. General condition:   | <input checked="" type="checkbox"/> Good       | <input type="checkbox"/> Fair           | <input type="checkbox"/> Poor |

Comments:

- 4. One IT read 0.6, other 33.0. AS demonstrated, the IT reading changes as racks are jiggled or flow varies; used as a reference of how well system is working but true performance is evaluated by the bacti samples.**
- 8. Replaced every 6-9 months. Planned for week of March 23<sup>rd</sup>.**
- 11. A new order is being placed to restock the 16 bulbs & O-rings used in March. Spare parts on site also include about 16 new quartz sleeves, and a spare sensor.**

**UNIT PROCESS: Post Aeration**

1. Number of units: **1** In operation: **1**
2. Proper flow distribution between units: ☐ Yes ☒ No\* ☐ NA
3. Evidence of following problems:
- |                                 |                               |  |  |
|---------------------------------|-------------------------------|--|--|
| a. dead spots                   | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |  |
| b. excessive foam               | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |  |
| c. poor aeration                | <input type="checkbox"/> Yes* | <input checked="" type="checkbox"/> No |  |
| d. mechanical equipment failure | <input type="checkbox"/> Yes* | <input type="checkbox"/> No            | <input checked="" type="checkbox"/> NA |
4. How is the aerator controlled? ☐ Time clock ☐ Manual ☐ Continuous  
☐ Other\* ☒ NA
5. What is the current operating schedule? **Continuous**
6. Step weirs level: ☐ Yes ☐ No ☒ NA
7. Effluent D.O. level: **Analyzed in situ at 1212 by S. Cawthron and S. Mack**  
**Plant = 9.74 mg/L @ 10.9 °C**  
**DEQ = 9.23 mg/L @ 10.9 °C**
8. General condition: ☒ Good ☐ Fair ☐ Poor

Comments:

**UNIT PROCESS: Effluent/Plant Outfall**

1. Type Outfall ☒ Shore based ☐ Submerged
2. Type if shore based: ☐ Wingwall ☐ Headwall ☐ Rip Rap ☒ Other
3. Flapper valve: ☐ Yes ☒ No ☐ NA
4. Erosion of bank: ☐ Yes ☒ No ☐ NA **See Comments**
5. Effluent plume visible? ☐ Yes\* ☒ No
6. Condition of outfall and supporting structures: ☒ Good ☐ Fair ☐ Poor\*
7. Final effluent, evidence of following problems:
  - a. oil sheen ☐ Yes\* ☒ No
  - b. grease ☐ Yes\* ☒ No
  - c. sludge bar ☐ Yes\* ☒ No
  - d. turbid effluent ☐ Yes\* ☒ No
  - e. visible foam ☐ Yes\* ☒ No
  - f. unusual color ☐ Yes\* ☒ No

Comments:

**2. None of above**

- 4. At the permit reissuance inspection it was observed that the outfall had been buried by natural sedimentation/siltation of the creek. As per Tom Faha's request, a channel was dug out from the end of the pipe to the creek to transport effluent into the stream by August 2004.**

➤ **The outfall is about 1/2 mile away from plant. It is visually checked once a month.**

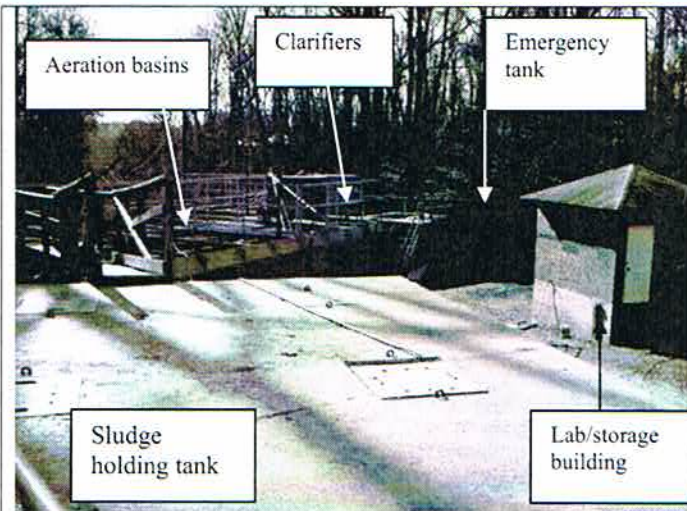
**UNIT PROCESS: Sludge Holding tank**

1. Number of units: **1** In operation: **1**
2. Type of sludge treated ☐ Primary ☒ WAS ☐ Other
3. Frequency of sludge application to digestors: **Once per week in warmer months less in cooler.**
4. Supernatant return rate: **Not measured**
5. pH adjustment provided: ☐ Yes ☒ No  
Utilized: ☐ Yes ☐ No ☒ NA
6. Tank contents well-mixed and relatively free of odors: ☒ Yes ☐ No\*
7. If diffused aeration is used, do diffusers require frequent cleaning?  
☐ Yes ☐ No ☒ NA
8. Location of supernatant return: ☒ Head ☐ Primary ☐ Other
9. Process control testing: **None**  
a. reduction of volatile solids ☐ Yes ☐ No  
b. pH ☐ Yes ☐ No  
c. alkalinity ☐ Yes ☐ No  
d. dissolved oxygen ☐ Yes ☐ No
10. Foaming problem present: ☐ Yes\* ☒ No
11. Signs of short-circuiting or overloads: ☐ Yes\* ☒ No
12. General condition: ☒ Good ☐ Fair ☐ Poor

Comments:

- 1. The sludge holding tank was very full. It was scheduled to be emptied pumped on March 24<sup>th</sup>. Sludge is pumped and hauled to Blue Plains Interceptor**





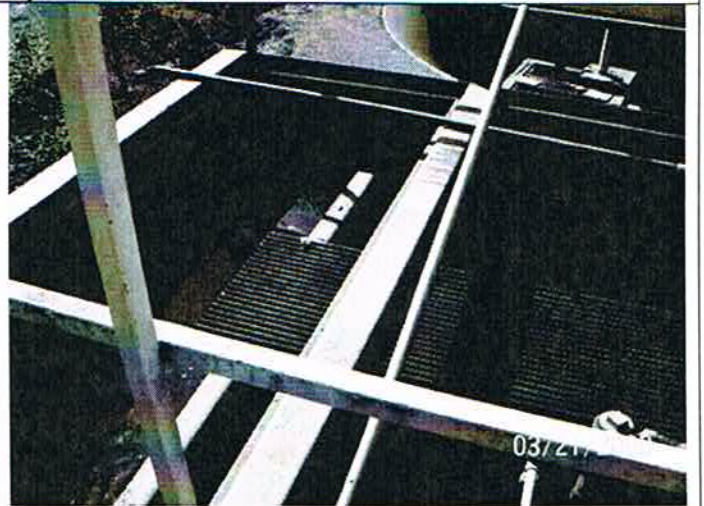
1) Overview of plant (photo brightened).



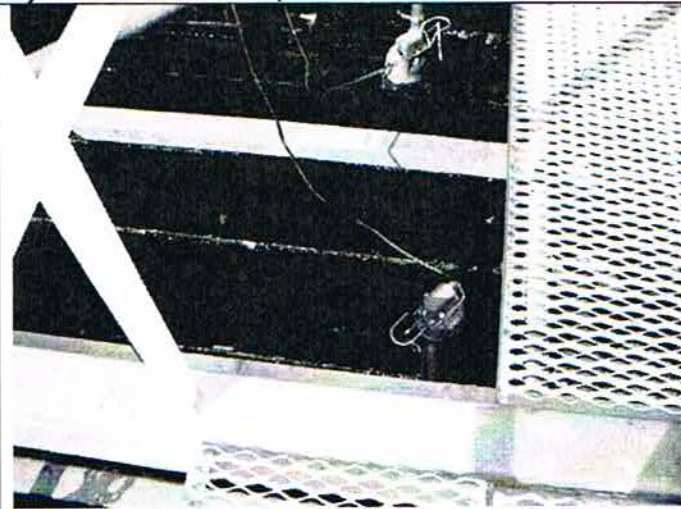
2) Headworks.



3) Aeration Basins w/ new catwalk.



4) Clarifier.

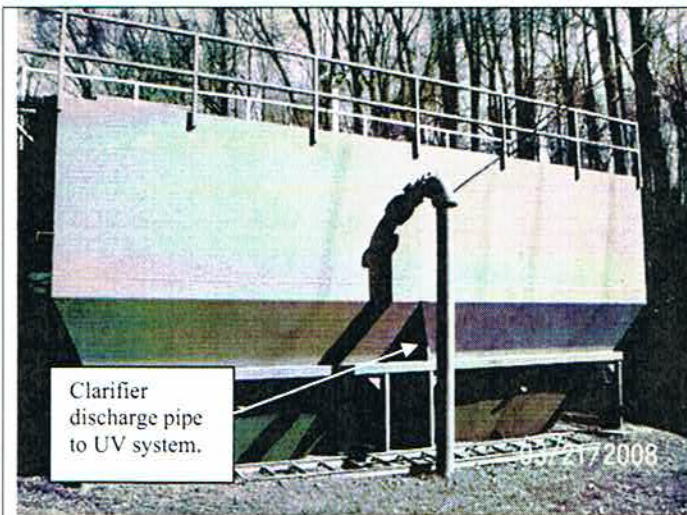


5) New sump pumps for cleaning clarifier troughs.

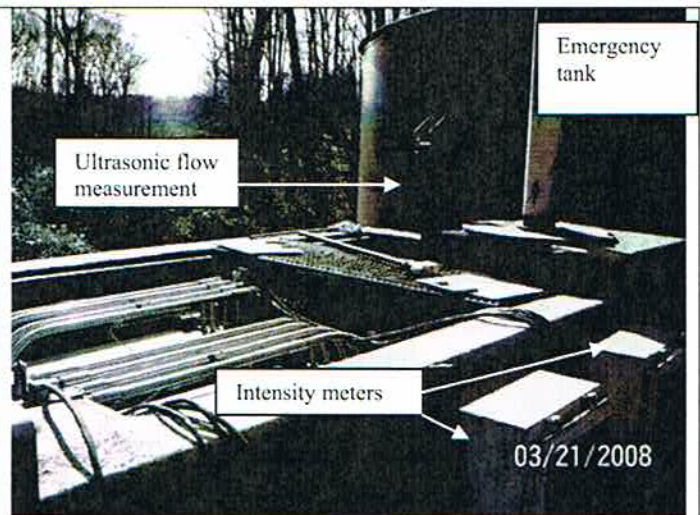


6) Clarifier discharge trough.

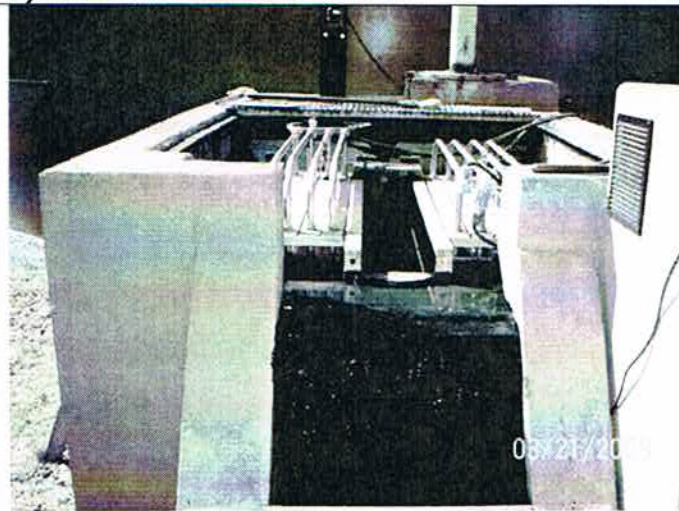




7) Exterior of clarifiers.



8) UV system.



9) Post aeration of discharge from the UV system.



10) Outfall 001 into Goose Creek.



11) Outfall 001.

Facility name: Foxcroft School STP  
 Site Inspection Date: March 21, 2008

VPDES Permit No. VA0024112  
 Photos & Layout by: Sharon Mack  
 Page 2 of 2



**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
LABORATORY INSPECTION REPORT**

10/01

<b>FACILITY NO:</b> VA0024112	<b>INSPECTION DATE:</b> March 21, 2008	<b>PREVIOUS INSP. DATE:</b> Sept. 18, 2002	<b>PREVIOUS EVALUATION:</b> No Deficiencies	<b>TIME SPENT:</b> 5 hrs
<b>NAME/ADDRESS OF FACILITY:</b>  Foxcroft School STP 22407 Foxhound Lane Middleburg, VA		<b>FACILITY CLASS:</b>  ( ) MAJOR (X) MINOR ( ) SMALL ( ) VPA/NDC	<b>FACILITY TYPE:</b>  (X) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	<b>UNANNOUNCED INSPECTION?</b> ( ) YES (X) NO  <b>FY-SCHEDULED INSPECTION?</b> (X) YES ( ) NO
<b>INSPECTOR(S):</b> Sharon Mack		<b>REVIEWERS:</b>	<b>PRESENT AT INSPECTION:</b> Steve Cawthron Charlie Triplett	

LABORATORY EVALUATION	DEFICIENCIES?	
	Yes	No
LABORATORY RECORDS		X
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES	X	

QUALITY ASSURANCE/QUALITY CONTROL			
Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
N	REPLICATE SAMPLES	pH	
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH	Daily
N	SPLIT SAMPLES		
N	SAMPLE BLANKS		
N	OTHER		
N	EPA-DMR QA DATA?	<b>RATING:</b> ( ) No Deficiency ( ) Deficiency (X) NA	
N	QC SAMPLES PROVIDED?	<b>RATING:</b> ( ) No Deficiency ( ) Deficiency (X) NA	

**LABORATORY RECORDS SECTION**

LABORATORY RECORDS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING DATE	<input checked="" type="checkbox"/>	ANALYSIS DATE	<input type="checkbox"/>	CONT MONITORING CHART
<input checked="" type="checkbox"/>	SAMPLING TIME	<input checked="" type="checkbox"/>	ANALYSIS TIME	<input checked="" type="checkbox"/>	INSTRUMENT CALIBRATION
<input type="checkbox"/>	SAMPLE LOCATION	<input checked="" type="checkbox"/>	TEST METHOD	<input checked="" type="checkbox"/>	INSTRUMENT MAINTENANCE
				<input checked="" type="checkbox"/>	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING SCHEDULES	<input type="checkbox"/>	CALCULATIONS	<input checked="" type="checkbox"/>	ANALYSIS PROCEDURES
-------------------------------------	--------------------	--------------------------	--------------	-------------------------------------	---------------------

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	<input checked="" type="checkbox"/>		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	<input checked="" type="checkbox"/>		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: <b>February 2008</b>	<input checked="" type="checkbox"/>		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	<input checked="" type="checkbox"/>		

**GENERAL SAMPLING AND ANALYSIS SECTION**

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	<input checked="" type="checkbox"/>		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	<input checked="" type="checkbox"/>		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	<input checked="" type="checkbox"/>		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	<input checked="" type="checkbox"/>		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: <b>BOD5, TSS, E. coli, Ammonia-N</b>  <b>ESS, Ltd.</b> <b>P.O. Box 520</b> <b>Culpeper, VA 22701</b>	<input checked="" type="checkbox"/>		

**LABORATORY EQUIPMENT SECTION**

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	<input checked="" type="checkbox"/>		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	<input checked="" type="checkbox"/>		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			<input checked="" type="checkbox"/>
ARE ANALYTICAL BALANCE(S) ADEQUATE?			<input checked="" type="checkbox"/>



# LABORATORY INSPECTION REPORT SUMMARY

<b>FACILITY NAME:</b> Foxcroft School STP	<b>FACILITY NO:</b> VA0024112	<b>INSPECTION DATE:</b> March 21, 2008
<input checked="" type="checkbox"/> Deficiencies	<input type="checkbox"/> No Deficiencies	
<b>LABORATORY RECORDS</b>		
The Laboratory Records section had <b>No Deficiencies</b> noted during the inspection.		
<b>GENERAL SAMPLING AND ANALYSIS</b>		
The General Sampling and Analysis section had <b>No Deficiencies</b> noted during the inspection.		
<b>LABORATORY EQUIPMENT</b>		
The Laboratory Equipment section had <b>No Deficiencies</b> noted during the inspection.  Thermometers for the sample refrigerator and composite sampler were checked against an NIST certified thermometer on March 10, 2008 by C. Triplett.		
<b>INDIVIDUAL PARAMETERS</b>		
<b>DO</b>		
The analysis for the parameter of Dissolved Oxygen (DO) had <b>No Deficiencies</b> noted during the inspection.		
<b>pH</b>		
The analysis for the parameter of pH had <b>Deficiencies</b> noted during the inspection.		
<ul style="list-style-type: none"> <li>➤ <b>A certificate of operator competence or initial demonstration of capability was not available for either operator.</b></li> <li>➤ <b>Duplicates had not been run every 20 samples at the time of this inspection, but the benchsheet was modified and duplicates analyzed and recorded starting March 31<sup>st</sup>.</b></li> <li>➤ <b>The plant did not have a written procedure for analyzing/recording duplicates.</b></li> </ul>		
<b>COMMENTS</b>		
<b>The staff should check the DEQ website at <a href="http://www.deq.state.va.us/vpdes/checklist.html">http://www.deq.state.va.us/vpdes/checklist.html</a> and download the most recent inspection check sheets to keep up to date with changes in minimal laboratory requirements. Some of these have been up dated as recently as March 2008.</b>		

ANALYST:	Steve Cawthron	VPDES NO.	VA0024112
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**Parameter: Dissolved Oxygen**  
**Method: Electrode**  
**01/08**

Meter: YSI 50B

**METHOD OF ANALYSIS:**

<b>X</b>	18 <sup>th</sup> Edition of Standard Methods-4500-O G		
	21 <sup>st</sup> or Online Editions of Standard Methods-4500-O G (01)		
<b>DO is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]</b>		<b>Y</b>	<b>N</b>
1)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [B.3]	<b>In situ</b>	
2)	Are meter and electrode operable and providing consistent readings? [3]	<b>X</b>	
3)	Is membrane in good condition without trapped air bubbles? [3.b]	<b>X</b>	
4)	Is correct filling solution used in electrode? [Mfr.]	<b>X</b>	
5)	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	<b>X</b>	
6)	Is meter calibrated before use or at least daily? [Mfr.]	<b>X</b>	
7)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	<b>X</b>	
8)	Is sample stirred during analysis? [Mfr.]	<b>In situ</b>	
9)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	<b>X</b>	
10)	Is meter stabilized before reading D.O.? [Mfr.]	<b>X</b>	
11)	Is electrode stored according to manufacturer's instructions? [Mfr.]	<b>X</b>	
12)	Is a duplicate sample analyzed after every 20 samples if citing 18 <sup>th</sup> or 19 <sup>th</sup> Edition [1020 B.6] or after every 10 samples for 20 <sup>th</sup> or 21 <sup>st</sup> Edition [Part 1020] Note: Not required for <i>in situ</i> samples.	<b>NA</b>	
13)	If a duplicate sample is analyzed, is the reported value for that sampling event, the average concentration of the sample and the duplicate? [DEQ]	<b>NA</b>	
14)	If a duplicate sample is analyzed, is the relative percent difference (RPD) < 20? [18 <sup>th</sup> ed. Table 1020 I; 21 <sup>st</sup> ed. DEQ]	<b>NA</b>	

COMMENTS:	➤ <b>Thermister was checked against an NIST certified thermometer on 3-10-08. Correction factor = - 0.2 mg/L.</b>
PROBLEMS:	<b>None noted or discussed</b>



ANALYST:	Steve Cawthron	VPDES NO	VA0024112
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**Parameter: Hydrogen Ion (pH)**  
**Method: Electrometric**  
**01/08**

**METHOD OF ANALYSIS**

<b>X</b>	18 <sup>th</sup> Edition of Standard Methods-4500-H-B
	21 <sup>st</sup> or On-Line Edition of Standard Methods-4500-H-B (00)

**pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]**

- 1) Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be  $\pm 0.1$  SU of the known concentration of the sample. [SM 1020 B.1]
- 2) Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]
- 3) Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]
- 4) Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] **NOTE:** Follow manufacturer's instructions.
- 5) After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should be within  $\pm 0.1$  SU. [4.a]
- 6) Do the buffer solutions appear to be free of contamination or growths? [3.1]
- 7) Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]
- 8) Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]
- 9) For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]
- 10) Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]
- 11) Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]
- 12) Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]
- 13) Is the sample stirred gently at a constant speed during measurement? [4.b]
- 14) Does the meter hold a steady reading after reaching equilibrium? [4.b]
- 15) Is a duplicate sample analyzed after every 20 samples if citing 18<sup>th</sup> or 19<sup>th</sup> Edition [1020 B.6] or after every 10 samples for 20<sup>th</sup> or 21<sup>st</sup> Edition [Part 1020] **Note:** Not required for *in situ* samples.
- 16) Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]
- 17) Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]

Y	N
	X
X	
X	
X	
X	
X	
X	
X	
X	
X	
X	
	X
NA	
	X

COMMENTS:	<b>4) 2 buffer calibration</b> <b>➤ Thermister was checked against an NIST certified thermometer on 3-10-08. Correction factor = 0.</b>
PROBLEMS:	<b>1) This requirement was discussed during the inspection and a copy of DEQ's guidance on how to do was emailed to S. Cawthron.</b> <b>15, 17) Requirements for duplicates was discussed during the inspection.</b>



**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION**  
**SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET**  
 Revised 3/08 [40 CFR, Part 136.3, Table II]

FACILITY NAME:		<b>Foxcroft School STP</b>				VPDES NO	<b>VA0024112</b>	DATE:	<b>March 21, 2008</b>										
PARAMETER		HOLDING TIMES				SAMPLE CONTAINER				PRESERVATION									
		APPROVED	MET?		LOGGED?		ADEQ. VOLUME	APPROP. TYPE		APPROVED	MET?		CHECKED?						
Y	N		Y	N	Y	N		Y	N		Y	N		Y	N				
BOD5 & CBOD5		48 HOURS	X		X		X			ANALYZE 2 HRS or 6°C				X		X			
TSS		7 DAYS	X		X		X			6°C				X		X			
FECAL COLIFORM / <i>E. coli</i> / <i>Enterococci</i>		6 HRS & 2 HRS TO PROCESS	See comments				X			X		10°C (1 HOUR)+ 0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>				X		X	
pH		15 MIN.	X		X					N/A									
DISSOLVED O <sub>2</sub>		15 MIN./IN SITU	X		X					N/A									
<p><b>PROBLEMS:</b> Not enough information was included on the Certificate of Analysis to determine compliance with hold times for bacteriological (bacti) samples for <i>E. coli</i>..</p> <p>The Chain of Custody completed for February 25<sup>th</sup> shows that the bacti sample was collected at Foxcroft School at 0937 and received at the ESS laboratory at 1053 on February 25<sup>th</sup>. However, the Certificate of Analysis shows that this sample was analyzed on February 25<sup>th</sup> at 0800. Please have the laboratory resolve this discrepancy.</p>																			



To: Joan C. Crowther  
From: Katie Conaway

Date: November 4, 2009  
Subject: Planning Statement for Foxcroft School WWTP  
Permit Number: VA0024112

Discharge Type: Municipal, Minor  
Discharge Flow: 0.075 MGD

Receiving Stream: Goose Creek  
Latitude / Longitude: 39° 00' 21" / -77° 44' 38"  
Waterbody ID: A05R, PL10

1. Is there monitoring data for the receiving stream?

While there is no monitoring data for the segment of Goose Creek that receives the discharge from VA0024112, there is monitoring data on a downstream segment of Goose Creek (VAN-A05R\_GOO01A00). Segment VAN-A05R\_GOO01A00 of Goose Creek extends from the confluence with Wancopin Creek, at rivermile 23.46, and continues downstream until the confluence with North Fork Goose Creek, at rivermile 16.58. The nearest downstream DEQ monitoring station with ambient data is Station 1AGOO022.44, located on Goose Creek at the Snickersville Turnpike (Route 734) bridge crossing. Station 1AGOO022.44 is located within Segment VAN-A05R\_GOO01A00. Station 1AGOO022.44 is located approximately 3.41 miles downstream from the Outfall of VA0024112.

- If yes, please attach latest summary.

The following is a monitoring summary for Segment VAN-A05R\_GOO01A00 as taken from the 2008 Integrated Assessment:

*Class III, Section 9.*

*DEQ ambient and biological station 1AGOO022.44, at Route 734. Citizen monitoring stations 1aGOO-10-SOS and 1aGOO-19-SOS.*

*Note: Although the fecal coliform bacteria criteria are no longer being used for assessment purposes, there has been insufficient E. coli bacteria monitoring along this assessment unit reach. The fecal coliform impairment formerly associated with this assessment unit will remain.*

*The recreation use is considered not supported, as described above. Biological and associated chemical monitoring indicates that the aquatic life and wildlife uses are fully supporting. Citizen monitoring finds a low probability of adverse conditions for biota. The fish consumption use was not assessed.*



- If no, where is the nearest downstream monitoring station.

N/A

2. Is the receiving stream on the current 303(d) list?

Yes. Goose Creek has several impairments listed on the current 303(d) list. However, it should be noted that the portion of Goose Creek that receives the discharge from VA0024112 has not been assessed, and therefore, has no impairments.

- If yes, what is the impairment?

1. Goose Creek Segment VAN-A05R\_GOO01A00: Extends from the confluence with Wancopin Creek, at rivermile 23.46, and continues downstream until the confluence with North Fork Goose Creek, at rivermile 16.58. Sufficient exceedances of the maximum fecal coliform bacteria criterion (4 of 25 samples - 16.0%) were recorded at DEQ's ambient water quality monitoring station (1AGOO022.44) at the Route 734 bridge to assess this stream segment as not supporting of the recreation use goal.
2. Goose Creek Segment VAN-A08R\_GOO03A02: Extends from the confluence with Little River and extends downstream until the backwaters of the Goose Creek Reservoir. Sufficient exceedances of the single sample maximum *E. coli* bacteria criterion (5 of 30 samples - 16.7%) were recorded at DEQ's ambient water quality monitoring station (1aGOO011.23) at the Route 621 crossing to assess this stream segment as not supporting of the recreation use goal.

This assessment unit was noted with an observed effect for total phosphorus for the 2006 Integrated Assessment. While nutrients will not be assessed until nutrient standards are adopted for free-flowing streams, the observed effect will remain due to the previous assessment. For the 2006 assessment, monitoring at station 01644000 indicated that three of 18 samples (16.7%) exceeded the total phosphorus screening value of 0.20 mg/L.

3. Goose Creek Segment VAN-A08L\_GOO02A02: Segment includes the impounded waters downstream of the Dulles Greenway Road bridge. The fish consumption use in the Goose Creek Reservoir is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected area includes the following tributaries in the Potomac River basin between the VA/MD state line near the Route 340 bridge (Loudoun County) to the I-395 bridge (Arlington County); Goose Creek up to the Dulles Greenway Road Bridge, Broad Run up to the Route 625 bridge, Difficult Run up to the Route 7 bridge, and Pimmit Run up to the Route 309 bridge.
4. Goose Creek Segment VAN-A08R\_GOO01A00: Extends from below the Goose Creek impoundment and continues downstream until the confluence with the Potomac River. Sufficient excursions from the instantaneous *E. coli* bacteria criterion (5 of 18 samples - 27.8%) were recorded at DEQ's ambient water quality monitoring station (1aGOO002.38) at the Route 7 crossing to assess this stream segment as not supporting of the recreation use goal.



In addition, this segment was included in Part I of the 1998 303(d) report as partially supporting the aquatic life use due to a moderate benthic impairment noted at the DEQ biological monitoring station 1AGOO002.38 at Route 7. Based on biological survey results from the 2002 and 2004 305(b) assessment periods, this stream segment was determined to be slightly impaired.

The fish consumption use is also categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. Additionally, there were exceedances of the water quality criterion based tissue screening value (TV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in American eel (2004) and of the risk-based tissue screening value (TSV) of 72 ppb for arsenic (As) in redbreast sunfish (2004) and 300 ppb for mercury (Hg) in smallmouth bass (2004). These exceedances are noted by observed effects.

- Has the TMDL been prepared?

A fecal coliform TMDL for the Goose Creek watershed was developed and approved by the U.S. EPA on May 1, 2003. The SWCB approved the TMDL on June 17, 2004. This TMDL explicitly included segment VAN-A08R\_GOO01A00. This TMDL was modified, and then re-approved by EPA on 10/27/2006. The purpose of the modification was to include a growth allocation for the future expansion of point source dischargers. The modification also included allocations in terms of *E. coli* bacteria.

A benthic TMDL for the Goose Creek watershed was approved by the U.S. EPA on April 26, 2004. The SWCB approved the TMDL on August 31, 2004. The TMDL Report concluded that sediment loads in excess of those found in reference streams are the cause of macroinvertebrate impairment in Goose Creek. Sources of sediment in Goose Creek are streambank erosion, erosion from pasture, and erosion from crops and construction sites.

PCB TMDL - No

- If yes, what is the WLA for the discharge?

Bacteria TMDL: The original TMDL gave VA0024112 an allocation of 2.08E+11 cfu/year of Fecal Coliform bacteria. The TMDL modification provided an allocation for this facility in terms of *E. coli* **1.31E+11 cfu/year**.

Benthic TMDL: The facility was given a WLA for TSS (**9.0 tons/year**).

- If no, what is the schedule for the TMDL?

TMDL Development Schedule:

VAN-A05R_GOO01A00:	Fecal Coliform	2016*
VAN-A08R_GOO03A02:	<i>E. coli</i>	2018*
VAN-A08L_GOO02A02:	PCBs in Fish Tissue	2018
VAN-A08R_GOO01A00:	PCBs in Fish Tissue	2018

\*Segments VAN-A05R\_GOO01A00 and VAN-A08R\_GOO03A02 are listed as needing a bacteria TMDL. However, with the expected approval of the 2010 Assessment Guidance, a

bacteria TMDL will not be required for these segments because they are “nested” within a completed bacteria TMDL. The bacteria sources in these impaired segments were already taken into account during the development of the downstream bacteria TMDL for Goose Creek.

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

N/A

- If yes, what is the impairment?

N/A

- Has a TMDL been prepared?

N/A

- Will the TMDL include the receiving stream?

N/A

- Is there a WLA for the discharge?

N/A

- What is the schedule for the TMDL?

N/A

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

In preparation for the PCB TMDL that will be developed for Goose Creek by 2018, the Assessment/TMDL Staff recommend that this facility perform low-level PCB monitoring during the upcoming permit cycle. TMDL Guidance Memo No. 09-2001 recommends that minor, municipal VPDES facilities collect 1 wet and 1 dry sample during the permit cycle, using EPA Method 1668B, which is capable of detecting low-level concentrations for all 209 PCB congeners.



# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Foxcroft School Wastewater Treatment Plant Permit No.: VA0024112  
 Receiving Stream: Goose Creek (Winter: Dec-May)

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO3) =	44 mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO3) =	50 mg/L	
90% Temperature (Annual) =	deg C		7Q10 (Annual) =	0.13 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	25 deg C	
90% Temperature (Wet season) =	17 deg C		30Q10 (Annual) =	0.1 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	25 deg C	
90% Maximum pH =	7.9 SU		1Q10 (Wet season) =	4.46 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	7.3 SU	
10% Maximum pH =	SU		30Q10 (Wet season)	8.8 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		30Q5 =	0.48 MGD					Discharge Flow =	0.075 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	7.3E+03	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	6.9E+01	--	--	--	--	--	--	na
Acrylonitrile <sup>c</sup>	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	na
Aldrin <sup>c</sup>	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	3.0E+00	--	na
Ammonia-N (mg/l) (Yearly)	0	2.62E+01	4.20E+00	na	--	2.6E+01	9.8E+00	na	--	--	--	--	--	2.6E+01	9.8E+00	na
Ammonia-N (mg/l) (High Flow)	0	1.03E+01	2.41E+00	na	--	6.4E+02	2.8E+02	na	--	--	--	--	--	6.4E+02	2.8E+02	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	3.0E+05	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	3.4E+02	4.1E+02	na	4.7E+03	--	--	--	--	3.4E+02	4.1E+02	na
Arsenic	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene <sup>c</sup>	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	na
Benzidine <sup>c</sup>	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	na
Benzo (a) anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (b) fluoranthene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (k) fluoranthene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (a) pyrene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether <sup>c</sup>	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether <sup>c</sup>	0	--	--	na	6.5E+04	--	--	na	4.8E+05	--	--	--	--	--	--	na
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	na
Bromoforn <sup>c</sup>	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.4E+04	--	--	--	--	--	--	na
Cadmium	0	1.8E+00	6.2E-01	na	--	1.8E+00	1.7E+00	na	--	--	--	--	--	1.8E+00	1.7E+00	na
Carbon Tetrachloride <sup>c</sup>	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	na
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	1.2E-02	na	8.1E-03	--	--	--	--	2.4E+00	1.2E-02	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	6.3E+05	na	--	--	--	--	--	8.6E+05	6.3E+05	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	3.0E+01	na	--	--	--	--	--	1.9E+01	3.0E+01	na
Chlorobenzene	0	--	--	na	1.8E+03	--	--	na	1.2E+04	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Chlorobromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	na
Chloroform	0	--	--	na	1.1E+04	--	--	na	8.1E+04	--	--	--	--	--	--	na
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	--	--	--	--	na
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.1E+03	--	--	--	--	--	--	na
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	1.1E-01	na	--	--	--	--	--	8.3E-02	1.1E-01	na
Chromium III	0	3.2E+02	3.9E+01	na	--	3.2E+02	1.1E+02	na	--	--	--	--	--	3.2E+02	1.1E+02	na
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	3.0E+01	na	--	--	--	--	--	1.6E+01	3.0E+01	na
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	na
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	na
Copper	0	7.0E+00	4.6E+00	na	--	7.0E+00	1.3E+01	na	--	--	--	--	--	7.0E+00	1.3E+01	na
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	1.4E+01	na	1.2E+05	--	--	--	--	2.2E+01	1.4E+01	na
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	na
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	na
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	2.7E-03	na	2.2E-03	--	--	--	--	1.1E+00	2.7E-03	na
Demeton	0	--	1.0E-01	na	--	--	2.7E-01	na	--	--	--	--	--	--	2.7E-01	na
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	4.6E-01	na	--	--	--	--	--	1.7E-01	4.6E-01	na
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
1,2-Dichlorobenzene	0	--	--	na	1.3E-03	--	--	na	9.6E+03	--	--	--	--	--	--	na
1,3-Dichlorobenzene	0	--	--	na	9.6E-02	--	--	na	7.1E+03	--	--	--	--	--	--	na
1,4-Dichlorobenzene	0	--	--	na	1.9E-02	--	--	na	1.4E+03	--	--	--	--	--	--	na
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	na
Dichlorobromomethane <sup>c</sup>	0	--	--	na	1.7E-02	--	--	na	1.7E+02	--	--	--	--	--	--	na
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E-02	--	--	na	3.7E+02	--	--	--	--	--	--	na
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	5.3E+04	--	--	--	--	--	--	na
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	7.4E+04	--	--	--	--	--	--	na
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.1E+03	--	--	--	--	--	--	na
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	na
1,3-Dichloropropene <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	1.5E-01	na	5.4E-04	--	--	--	--	2.4E-01	1.5E-01	na
Dieldrin <sup>c</sup>	0	--	--	na	4.4E+04	--	--	na	3.3E+05	--	--	--	--	--	--	na
Diethyl Phthalate	0	--	--	na	8.5E+02	--	--	na	6.3E+03	--	--	--	--	--	--	na
2,4-Dimethylphenol	0	--	--	na	1.1E+06	--	--	na	8.1E+06	--	--	--	--	--	--	na
Dimethyl Phthalate	0	--	--	na	4.5E+03	--	--	na	3.3E+04	--	--	--	--	--	--	na
Di-n-Butyl Phthalate	0	--	--	na	5.3E+03	--	--	na	3.9E+04	--	--	--	--	--	--	na
2,4-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.1E+03	--	--	--	--	--	--	na
2-Methyl-4,6-Dinitrophenol	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	na
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	5.1E-08	--	--	na	3.8E-07	--	--	--	--	--	--	na
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	na
1,2-Diphenylhydrazine <sup>c</sup>	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	1.5E-01	na	6.6E+02	--	--	--	--	2.2E-01	1.5E-01	na
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	1.5E-01	na	6.6E+02	--	--	--	--	2.2E-01	1.5E-01	na
Beta-Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	1.5E-01	--	--	--	--	--	--	--	--	--
Alpha + Beta Endosulfan	0	--	--	na	8.9E+01	--	--	na	6.6E+02	--	--	--	--	--	--	na
Endosulfan Sulfate	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	9.8E-02	na	4.4E-01	--	--	--	--	8.6E-02	9.8E-02	na
Endrin	0	--	--	na	3.0E-01	--	--	na	2.2E+00	--	--	--	--	--	--	na
Endrin Aldehyde	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteland Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	na	--	na	1.6E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.0E+03	--	--	--	--	--	--	--	na	--	na	1.0E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	3.9E+04	--	--	--	--	--	--	--	na	--	na	3.9E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Guthion	0	--	1.0E-02	na	7.9E-04	--	2.7E-02	na	--	--	--	--	--	--	2.7E-02	--	na	2.7E-02	na	--
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	1.0E-02	na	7.9E-04	--	--	--	--	5.2E-01	1.0E-02	--	na	1.0E-02	na	7.9E-04
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	1.0E-02	na	3.9E-04	--	--	--	--	5.2E-01	1.0E-02	--	na	1.0E-02	na	3.9E-04
Hexachlorobenzene <sup>c</sup>	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	na	--	na	2.9E-03
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	na	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	na	--	na	4.9E-02
Alpha-BHC <sup>c</sup>	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	na	--	na	1.7E-01
Hexachlorocyclohexane Beta BHC <sup>c</sup>	0	--	--	na	1.8E+03	9.5E-01	--	na	1.8E+03	--	--	--	--	9.5E-01	--	--	na	--	na	1.8E+03
Hexachlorocyclohexane Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	na	1.1E+03	--	--	na	8.1E+03	--	--	--	--	--	--	--	na	--	na	8.1E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	na	--	na	3.3E+01
Hexachloroethane <sup>c</sup>	0	--	2.0E+00	na	--	--	5.5E+00	na	--	--	--	--	--	--	5.5E+00	--	na	--	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	na	--	na	1.8E-01
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	na	--	na	9.6E+03
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Isophorone <sup>c</sup>	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	0.0E+00	--	na	--	na	--
Kepone	0	4.9E+01	5.1E+00	na	--	4.9E+01	1.4E+01	na	--	--	--	--	--	4.9E+01	1.4E+01	--	na	--	na	--
Lead	0	--	1.0E-01	na	--	--	2.7E-01	na	--	--	--	--	--	--	2.7E-01	--	na	--	na	--
Malathion	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	2.1E+00	--	--	--	--	--	--	1.4E+00	2.1E+00	--	na	--	na	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.1E+04	--	--	--	--	--	--	--	na	--	na	1.1E+04
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	na	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	8.2E-02	na	--	--	--	--	--	--	8.2E-02	--	na	--	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	0.0E+00	--	na	--	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	2.9E+01	na	3.4E+04	--	--	--	--	1.0E+02	2.9E+01	--	na	--	na	3.4E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	5.1E+03	--	--	--	--	--	--	--	na	--	na	5.1E+03
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	na	--	na	3.0E+01
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	na	--	na	6.0E+01
N-Nitrosodi-n-propylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	na	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	1.8E+01	na	--	--	--	--	--	2.8E+01	1.8E+01	--	na	--	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	3.6E-02	na	--	--	--	--	--	6.5E-02	3.6E-02	--	na	--	na	--
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	3.8E-02	na	6.4E-04	--	--	--	--	--	--	--	na	--	na	6.4E-04
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	1.6E-02	na	3.0E+01	--	--	--	--	7.7E-03	1.6E-02	--	na	--	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	6.4E+06	--	--	--	--	--	--	--	na	--	na	6.4E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	3.0E+04	--	--	--	--	--	--	--	na	--	na	3.0E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	3.0E+01	--	--	--	--	--	--	--	na	--	na	3.0E+01
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	na	--	na	--



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	1.4E+01	na	3.1E+04	--	--	--	--	2.0E+01	1.4E+01	na
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	1.0E+00	--	na
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	na
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	na
Thallium	0	--	--	na	4.7E+01	--	--	na	3.5E+00	--	--	--	--	--	--	na
Toluene	0	--	--	na	6.0E+03	--	--	na	4.4E+04	--	--	--	--	--	--	na
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	5.5E-04	na	2.8E-03	--	--	--	--	7.3E-01	5.5E-04	na
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	2.0E-01	na	--	--	--	--	--	4.6E-01	2.0E-01	na
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	5.2E+02	--	--	--	--	--	--	na
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	na
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	na
2-(2,4,5-Trichlorophenoxy) propionic acid (SiVox)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Vinyl Chloride <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	--	--	--	--	--	--	--	na
Zinc	0	6.5E+01	6.1E+01	na	2.6E+04	6.5E+01	1.7E+02	na	1.9E+05	--	--	--	--	6.5E+01	1.7E+02	na

Notes:	
1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise	
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals	
3. Metals measured as Dissolved, unless specified otherwise	
4. "C" indicates a carcinogenic parameter	
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information	
6. Antidegradation WLAs are based upon a complete mix	
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic	
= (0.1(WQC - background conc.) + background conc.) for human health	
7. WLAs established at the following stream flows: 1010 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.	

Metal	Target Value (SSTV)
Antimony	4.7E+03
Arsenic	1.4E+02
Barium	na
Cadmium	7.2E-01
Chromium III	6.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	8.3E+00
Manganese	na
Mercury	5.6E-01
Nickel	1.7E+01
Selenium	8.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Foxcroft School Wastewater Treatment Plant Permit No.: VA0024112  
 Receiving Stream: Goose Creek (Summer June-November) Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO <sub>3</sub> ) =	44 mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO <sub>3</sub> ) =	50 mg/L	
90% Temperature (Annual) =	deg C		7Q10 (Annual) =	0.13 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	25 deg C	
90% Temperature (Wet season) =	25 deg C		30Q10 (Annual) =	0.1 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =	7.9 SU		1Q10 (Wet season) =	4.46 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	7.4 SU	
10% Maximum pH =	SU		30Q10 (Wet season)	8.8 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		30Q5 =	0.48 MGD					Discharge Flow =	0.075 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	-	-	na	9.9E+02	-	-	na	7.3E+03	-	-	-	-	-	-	na
Acrolein	0	-	-	na	9.3E+00	-	-	na	6.9E+01	-	-	-	-	-	-	na
Acrylonitrile <sup>c</sup>	0	-	-	na	2.5E+00	-	-	na	2.5E+00	-	-	-	-	-	-	na
Aldrin <sup>c</sup>	0	3.0E+00	-	na	5.0E-04	3.0E+00	-	na	5.0E-04	-	-	-	-	3.0E+00	-	na
Ammonia-N (mg/l)	0	2.30E+01	3.92E+00	na	-	2.3E+01	9.1E+00	na	-	-	-	-	-	2.3E+01	9.1E+00	na
(Yearly)	0	1.04E+01	1.46E+00	na	-	6.3E+02	1.7E+02	na	-	-	-	-	-	6.3E+02	1.7E+02	na
Ammonia-N (mg/l)	0	-	-	na	4.0E+04	-	-	na	3.0E+05	-	-	-	-	-	-	na
(High Flow)	0	-	-	na	6.4E+02	-	-	na	4.7E+03	-	-	-	-	-	-	na
Anthracene	0	-	-	na	-	3.4E+02	4.1E+02	na	-	-	-	-	-	3.4E+02	4.1E+02	na
Antimony	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Arsenic	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Barium	0	-	-	na	5.1E+02	-	-	na	5.1E+02	-	-	-	-	-	-	na
Benzene <sup>c</sup>	0	-	-	na	2.0E-03	-	-	na	2.0E-03	-	-	-	-	-	-	na
Benzidine <sup>c</sup>	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	na
Benzo (a) anthracene <sup>c</sup>	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	na
Benzo (b) fluoranthene <sup>c</sup>	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	na
Benzo (k) fluoranthene <sup>c</sup>	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	na
Benzo (a) pyrene <sup>c</sup>	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	na
Bis(2-Chloroethyl) Ether <sup>c</sup>	0	-	-	na	5.3E+00	-	-	na	5.3E+00	-	-	-	-	-	-	na
Bis(2-Chloroisopropyl) Ether <sup>c</sup>	0	-	-	na	6.5E+04	-	-	na	4.8E+05	-	-	-	-	-	-	na
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	-	-	na	2.2E+01	-	-	na	2.2E+01	-	-	-	-	-	-	na
Bromofom <sup>c</sup>	0	-	-	na	1.4E+03	-	-	na	1.4E+03	-	-	-	-	-	-	na
Butylbenzylphthalate	0	-	-	na	1.9E+03	-	-	na	1.4E+04	-	-	-	-	-	-	na
Cadmium	0	1.8E+00	6.2E-01	na	-	1.8E+00	1.7E+00	na	-	-	-	-	-	1.8E+00	1.7E+00	na
Carbon Tetrachloride <sup>c</sup>	0	-	-	na	1.6E+01	-	-	na	1.6E+01	-	-	-	-	-	-	na
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	1.2E-02	na	8.1E-03	-	-	-	-	2.4E+00	1.2E-02	na
Chloride	0	8.6E+05	2.3E+05	na	-	8.6E+05	6.3E+05	na	-	-	-	-	-	8.6E+05	6.3E+05	na
Chlorobenzene	0	1.9E+01	1.1E+01	na	-	1.9E+01	3.0E+01	na	1.2E+04	-	-	-	-	1.9E+01	3.0E+01	na
TRC	0	-	-	na	1.6E+03	-	-	na	1.2E+04	-	-	-	-	-	-	na



Parameter (ug/L unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocat			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH (PWS)
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	na
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	na
Fluorene	0	--	--	na	5.3E+03	--	--	na	na
Foaming Agents	0	--	--	na	--	--	--	na	na
Guthion	0	--	1.0E-02	na	--	--	2.7E-02	na	na
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	1.0E-02	na	na
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	1.0E-02	na	na
Hexachlorobenzene <sup>c</sup>	0	--	--	na	2.9E-03	--	--	na	na
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	na
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	na
Alpha-BHC <sup>c</sup>	0	--	--	na	--	--	--	na	na
Hexachlorocyclohexane Beta	0	--	--	na	1.7E-01	--	--	na	na
BHC <sup>c</sup>	0	--	--	na	--	--	--	na	na
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	na
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	na	1.1E+03	--	--	na	na
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	na
Hexachlorothane <sup>c</sup>	0	--	2.0E+00	na	--	--	--	na	na
Hydrogen Sulfide	0	--	--	na	--	--	--	na	na
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	na
Iron	0	--	--	na	--	--	--	na	na
Isothorone <sup>c</sup>	0	--	--	na	9.6E+03	--	--	na	na
Keponne	0	--	0.0E+00	na	--	--	0.0E+00	na	na
Lead	0	4.9E+01	5.1E+00	na	--	4.9E+01	1.4E+01	na	na
Malathion	0	--	1.0E-01	na	--	--	2.7E-01	na	na
Manganese	0	--	--	na	--	--	--	na	na
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	2.1E+00	na	na
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	na
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	na
Methoxychlor	0	--	3.0E-02	na	--	--	8.2E-02	na	na
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	na
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	2.9E+01	na	na
Nitrate (as N)	0	--	--	na	--	--	--	na	na
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	na
N-Nitrosodimethylamine <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	na
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	na
N-Nitrosodi-n-propylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	na
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	1.8E+01	na	na
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	3.6E-02	na	na
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	3.8E-02	na	na
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	1.6E-02	na	na
Phenol	0	--	--	na	8.6E+05	--	--	na	na
Pyrene	0	--	--	na	4.0E+03	--	--	na	na
Radonucides (Gross Alpha Activity (pCi/L))	0	--	--	na	--	--	--	na	na
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	na
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	na
Uranium (ug/L)	0	--	--	na	--	--	--	na	na

Parameter (ug/L unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	8.1E+04	--	--	--	--	--	--	--	--	--	--	na	8.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	--	--	na	--	8.3E-02	1.1E-01	--	--	--	--	--	--	8.3E-02	1.1E-01	na	--
Chromium III	0	3.2E+02	3.9E+01	na	--	--	--	na	--	3.2E+02	1.1E+02	--	--	--	--	--	--	3.2E+02	1.1E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	--	--	na	--	1.6E+01	3.0E+01	--	--	--	--	--	--	1.6E+01	3.0E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	4.6E+00	na	--	--	--	na	--	7.0E+00	1.3E+01	--	--	--	--	--	--	7.0E+00	1.3E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	--	--	na	1.2E+05	2.2E+01	1.4E+01	--	--	--	--	--	--	2.2E+01	1.4E+01	na	--
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	--	--	na	2.2E-03	1.1E+00	2.7E-03	--	--	--	--	--	--	1.1E+00	2.7E-03	na	2.2E-03
Demeton	0	--	--	na	--	--	--	na	--	--	2.7E-01	--	--	--	--	--	--	--	2.7E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	--	--	na	--	1.7E-01	4.6E-01	--	--	--	--	--	--	1.7E-01	4.6E-01	na	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	5.3E+04	--	--	--	--	--	--	--	--	--	--	na	5.3E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	7.4E+04	--	--	--	--	--	--	--	--	--	--	na	7.4E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
1,3-Dichloropropene <sup>c</sup>	0	--	5.6E-02	na	5.4E-04	2.4E-01	1.5E-01	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	1.5E-01	na	5.4E-04
Dieldrin <sup>c</sup>	0	--	--	na	4.4E+04	--	--	na	3.3E+05	--	--	--	--	--	--	--	--	--	--	na	3.3E+05
Diethyl Phthalate	0	--	--	na	8.5E+02	--	--	na	6.3E+03	--	--	--	--	--	--	--	--	--	--	na	6.3E+03
2,4-Dimethylphenol	0	--	--	na	1.1E+06	--	--	na	8.1E+06	--	--	--	--	--	--	--	--	--	--	na	8.1E+06
Dimethyl Phthalate	0	--	--	na	4.5E+03	--	--	na	3.3E+04	--	--	--	--	--	--	--	--	--	--	na	3.3E+04
Di-n-Butyl Phthalate	0	--	--	na	5.3E+03	--	--	na	3.9E+04	--	--	--	--	--	--	--	--	--	--	na	3.9E+04
2,4-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	5.1E-08	--	--	na	3.8E-07	--	--	--	--	--	--	--	--	--	--	na	3.8E-07
Heptachlorodibenzo-p-dioxin 2,3,7,8-	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	8.9E+01	2.2E-01	1.5E-01	na	6.6E+02	2.2E-01	1.5E-01	--	--	--	--	--	--	2.2E-01	1.5E-01	na	6.6E+02
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	1.5E-01	na	6.6E+02	2.2E-01	1.5E-01	--	--	--	--	--	--	2.2E-01	1.5E-01	na	6.6E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	1.5E-01	na	6.6E+02	2.2E-01	1.5E-01	--	--	--	--	--	--	2.2E-01	1.5E-01	na	6.6E+02
Alpha + Beta Endosulfan	0	--	--	na	8.9E+01	--	--	na	6.6E+02	--	--	--	--	--	--	--	--	--	--	na	6.6E+02
Endosulfan Sulfate	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	9.8E-02	na	4.4E-01	--	--	--	--	--	--	--	--	8.6E-02	9.8E-02	na	4.4E-01
Endrin	0	--	--	na	3.9E-01	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00
Endrin Aldehyde	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	1.4E+01	na	3.1E+04	--	--	--	--	2.0E+01	1.4E+01	na
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	1.0E+00	--	na
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	na
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	na
Thallium	0	--	--	na	4.7E-01	--	--	na	3.5E+00	--	--	--	--	--	--	na
Toluene	0	--	--	na	6.0E+03	--	--	na	4.4E+04	--	--	--	--	--	--	na
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	5.5E-04	na	2.8E-03	--	--	--	--	7.3E-01	5.5E-04	na
Trinbutyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	2.0E-01	na	--	--	--	--	--	4.6E-01	2.0E-01	na
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	5.2E+02	--	--	--	--	--	--	na
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	na
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	na
2-(2,4,5-Trichlorophenoxy) propionic acid (Sivex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Vinyl Chloride <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Zinc	0	6.5E+01	6.1E+01	na	2.6E+04	6.5E+01	1.7E+02	na	1.9E+05	--	--	--	--	6.5E+01	1.7E+02	na

Metal	Target Value (SSTV)
Antimony	4.7E+03
Arsenic	1.4E+02
Barium	na
Cadmium	7.2E-01
Chromium III	6.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	8.3E+00
Manganese	na
Mercury	5.6E-01
Nickel	1.7E+01
Selenium	8.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
 = (0.1(WQC - background conc.) + background conc.) for human health

WLAs established at the following stream flows: 1Q10 for Acute, 3Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 3Q05 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Foxcroft School DMR pH data

Winter (Dec- May)			Summer (June -Nov)		
4/30/09		6.9	10/31/09		7.1
3/31/09		7.1	9/30/09		7.1
2/28/09		7.2	8/31/09		7.2
1/31/09		7.2	7/31/09		7.1
12/31/08		7.2	6/30/09		7.2
5/31/08		7.1	5/31/09		7.1
4/30/08		6.9	11/30/08		7.2
3/31/08		7	10/31/08		7.1
2/29/08		7.2	9/30/08		6.8
1/31/08		7.2	8/31/08		7.2
12/31/07		7.3	7/31/08		7.2
5/31/07		6.9	6/30/08		7.2
4/30/07		7	11/30/07		7.2
3/31/07		7.1	10/31/07		7.9
2/28/07		7.2	9/30/07		7.2
1/31/07		7.2	8/31/07		7.2
12/31/06		7.3	7/31/07		7.4
5/31/06		7.1	6/30/07		7.3
4/30/06		7	11/30/06		7.3
3/31/06		7.1	10/31/06		6.9
2/28/06		7.4	9/30/06		6.9
1/31/06		7.5	8/31/06		7.2
12/31/05		7.2	7/31/06		7.2
5/31/05		6.9	6/30/06		7.1
4/30/05		7	11/30/05		7.5
3/31/05		6.9	10/31/05		7.6
2/28/05		7.2	9/30/05		7.3
1/31/05		7.7	8/31/05		7.1
12/31/04		6.9	7/31/05		7.1
5/31/04		6.6	6/30/05		7
4/30/04		7	11/30/04		7.1
3/31/04		7.1	10/31/04		6.8
2/29/04		7	9/30/04		7.5
1/31/04		7	8/31/04		6.9
12/31/03		7.2	7/31/04		6.9
			6/30/04		7
			11/30/03		7.1

90th Percentile = 7.3

90th Percentile = 7.44



Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)			Winer (Dec - May)		
9/9/1974		20.56	12/9/1974		6.11
10/11/1974		13.89	1/24/1975		1.67
11/24/1974		8.89	2/9/1975		1.67
6/18/1975		25	3/5/1975		2.78
7/26/1975		23.33	4/24/1975		15
8/4/1975		25.56	5/20/1975		21.11
9/25/1975		21.11	12/29/1975		3.89
10/7/1975		15	1/7/1976		1.67
11/14/1975		7.78	2/19/1976		10
7/30/1976		24.44	3/2/1976		10
8/16/1976		22.22	4/20/1976		22.78
9/16/1976		18.89	5/5/1976		13.89
9/30/1976		13.89	12/7/1976		1.11
11/1/1976		9.44	3/21/1977		8.1
6/23/1977		23	4/12/1977		17
7/25/1977		24	5/4/1977		17.5
8/9/1977		25	12/5/1977		0.6
9/22/1977		2	3/21/1978		9
10/28/1977		15.5	4/6/1978		11
11/21/1977		0.9	5/15/1978		14
6/27/1978		25	12/12/1978		2
7/18/1978		23	1/2/1979		7.5
8/21/1978		22	3/15/1979		8
9/18/1978		24	5/1/1979		16
10/2/1978		16	12/10/1979		0.7
10/31/1978		10	1/6/1980		0.6
6/4/1979		17.5	2/11/1980		1
7/9/1979		22	3/12/1980		6
8/6/1979		27	4/16/1980		10
8/30/1979		23.5	5/19/1980		19.2
10/30/1979		14	12/4/1980		7.2
11/27/1979		12	2/2/1981		--
6/2/1980		22.5	3/4/1981		4.3
7/31/1980		25	4/1/1981		13.7
11/13/1980		6.6	5/4/1981		15.5
6/29/1981		24.3	12/1/1981		0.3
7/20/1981		26	1/4/1982		2.8
8/3/1981		23.9	5/6/1982		19.5
9/1/1981		24	12/14/1982		1.5
10/1/1981		16	2/2/1983		5
11/4/1981		12.4	3/8/1983		8.4
6/14/1982		14.5	4/5/1983		10.5
7/12/1982		24.6	5/4/1983		16.5
9/28/1982		16.5	12/13/1983		8
10/25/1982		5.49	2/28/1984		4
11/9/1982		7	3/14/1984		3.5
6/7/1983		19.2	4/10/1984		10
7/6/1983		22	5/8/1984		15.5
8/2/1983		25.5	1/16/1985		0
9/13/1983		23	2/14/1985		2
10/12/1983		16	3/5/1985		9
11/14/1983		4.3	5/14/1985		24
6/12/1984		27	12/10/1985		3.5
7/10/1984		23	1/7/1986		0
8/28/1984		24	2/1/1986		1



Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)			Winer (Dec - May)	
9/5/1984		20.2	3/4/1986	4.3
10/2/1984		--	4/2/1986	15
6/11/1985		22.5	5/13/1986	17.5
7/9/1985		23.5	10/28/1986	12
8/7/1985		23	4/7/1987	5.2
9/24/1985		18.5	5/5/1987	9
10/22/1985		11.5	12/21/1987	5.5
11/20/1985		13	1/28/1988	--
6/17/1986		24	3/8/1988	8.1
7/15/1986		23	4/26/1988	14.5
9/9/1986		18	5/24/1988	17.8
6/2/1987		22.6	11/15/1988	6.6
7/23/1987		29	1/11/1989	3.1
8/11/1987		24.4	2/8/1989	1.5
9/23/1987		18.3	3/9/1989	1.6
10/13/1987		9.3	4/11/1989	8.9
11/23/1987		1.8	5/9/1989	12.6
6/21/1988		22.1	11/7/1989	8.7
7/13/1988		21.4	12/7/1989	1.7
8/10/1988		22.5	1/4/1990	0
9/15/1988		18.7	2/8/1990	4
10/13/1988		9.4	3/13/1990	--
6/7/1989		20.2	4/11/1990	9.3
7/26/1989		--	5/7/1990	11.4
8/9/1989		19.8	12/11/1990	4.6
9/14/1989		23	1/22/1991	2.8
10/5/1989		13.7	2/12/1991	--
6/4/1990		15.6	3/6/1991	2.7
7/2/1990		23.1	4/3/1991	10.3
8/7/1990		21.9	5/1/1991	18.9
9/11/1990		20.7	12/11/1991	5.1
10/16/1990		--	1/2/1992	2.8
11/14/1990		5.9	2/3/1992	1.4
6/12/1991		24.1	3/4/1992	7.4
7/2/1991		24.2	4/7/1992	11.7
7/31/1991		--	5/6/1992	13.8
8/28/1991		24.8	12/2/1992	5.4
10/30/1991		11.6	1/12/1993	4.7
11/26/1991		4.6	2/3/1993	1.4
6/3/1992		19	3/3/1993	7.3
7/15/1992		26.6	4/7/1993	9.9
8/5/1992		21.6	5/6/1993	18.7
8/6/1992		--	1/26/1994	1.1
9/2/1992		21	2/2/1994	1
10/21/1992		9.6	3/22/1994	8.1
11/18/1992		7.6	4/13/1994	13.5
6/9/1993		22.8	5/18/1994	14.1
7/7/1993		27.1	12/7/1994	9.9
8/4/1993		25.4	1/4/1995	0.6
9/22/1993		17.6	2/1/1995	2.1
10/6/1993		12.5	3/1/1995	6.4
10/22/1993		--	4/4/1995	11.9
11/9/1993		5.6	5/3/1995	13.6
6/8/1994		24.1	12/7/1995	4
7/6/1994		27.3	2/8/1996	1.1



Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)				Winer (Dec - May)	
9/7/1994		18.5		3/7/1996	7.5
10/18/1994		10.7		4/3/1996	9
11/9/1994		12.3		5/8/1996	12.5
7/6/1995		--		12/3/1996	5.6
7/12/1995		23.4		1/7/1997	5.9
8/2/1995		26.3		2/4/1997	4.9
9/13/1995		20.2		3/27/1997	12.1
10/4/1995		18.4		4/8/1997	13.3
6/5/1996		18.3		5/6/1997	16.1
8/21/1996		21.6		12/2/1997	5.4
9/12/1996		19.9		1/14/1998	4.5
11/13/1996		4.6		2/3/1998	--
6/5/1997		15.8		3/3/1998	7.6
7/8/1997		23.3		4/1/1998	17.3
8/6/1997		20.7		12/15/1998	2.9
9/3/1997		22.7		1/5/1999	0.1
10/7/1997		18		1/5/1999	0.1
11/13/1997		6.5		2/2/1999	3
6/9/1998		17.1		3/9/1999	0.1
7/23/1998		27		4/6/1999	11.7
8/12/1998		23.7		5/5/1999	19.5
10/20/1998		14.4		12/29/1999	1.3
11/18/1998		8.3		3/1/2000	10.6
6/15/1999		23.8		4/4/2000	15
7/15/1999		22.6		5/2/2000	16
8/10/1999		22.2		12/11/2000	--
9/7/1999		--		1/23/2001	--
9/8/1999		--		2/6/2001	--
10/25/1999		10.4		3/29/2001	6.02
11/29/1999		7.6		4/3/2001	8.57
6/5/2000		18.5		5/1/2001	16.15
7/10/2000		24.88		12/12/2001	7.04
8/1/2000		24.39		1/24/2002	3.78
9/7/2000		19.05		2/7/2002	1.92
10/10/2000		10.99		3/21/2002	8.37
11/1/2000		--		4/10/2002	13.76
6/6/2001		19.9		5/9/2002	17.37
9/25/2001		17.35		1/29/2007	0.4
10/11/2001		13.16		3/13/2007	8.8
11/15/2001		10.95		5/14/2007	17.7
6/5/2002		24.78		1/28/2008	0.6
7/2/2002		25.28		3/26/2008	8.7
7/31/2007		26.2		5/8/2008	18.8
9/5/2007		22.4			
11/6/2007		9.7			

90th Percentile= 25

90th Percentile = 17.18

Goose Creek Ambient Water pH (SU) Data (Sept '74-'May 08)

Winter (Dec-May)

Summer (June-Nov)

12/9/1974	6.8		9/9/1974	7.3
1/24/1975	7		10/11/1974	9
2/9/1975	6.9		11/24/1974	7
3/5/1975	7		6/18/1975	7.7
4/24/1975	8.5		7/26/1975	7.5
5/20/1975	7.5		8/4/1975	7.1
12/29/1975	7.3		9/25/1975	7
1/7/1976	7.3		10/7/1975	7
2/19/1976	7.4		11/14/1975	7.2
3/2/1976	7		7/30/1976	7.4
4/20/1976	8.6		8/16/1976	7.3
5/5/1976	8		9/16/1976	7.3
12/7/1976	7.3		9/30/1976	7.5
3/21/1977	7.4		11/1/1976	7.3
4/12/1977	7.3		6/23/1977	7.8
5/4/1977	7.7		7/25/1977	7.5
12/5/1977	7.3		8/9/1977	7.4
3/21/1978	7.1		9/22/1977	7.6
4/6/1978	7.3		10/28/1977	7.3
5/15/1978	7.3		11/21/1977	7.2
12/12/1978	7.3		6/27/1978	7.7
1/2/1979	7.1		7/18/1978	7.7
3/15/1979	7		8/21/1978	7.9
5/1/1979	7.8		9/18/1978	8.5
12/10/1979	7.3		10/2/1978	7.4
1/6/1980	7.5		10/31/1978	7.8
2/11/1980	7.2		6/4/1979	7
3/12/1980	7.3		7/9/1979	8.8
4/16/1980	7.5		8/6/1979	7.5
5/19/1980	7.8		8/30/1979	7.5
12/4/1980	8.8		10/30/1979	7
2/2/1981	--		11/27/1979	7.3
3/4/1981	7.4		6/2/1980	8.3
4/1/1981	9.5		7/31/1980	7.5
5/4/1981	7.2		11/13/1980	8.3
12/1/1981	6.9		6/29/1981	8.3
1/4/1982	6.6		7/20/1981	7.4
2/1/1982	6.1		8/3/1981	7
3/2/1982	6.7		9/1/1981	7.3
4/1/1982	7.4		10/1/1981	7.5
5/6/1982	7.2		11/4/1981	7.8
12/14/1982	7		6/14/1982	6.9
2/2/1983	7.5		7/12/1982	7.7
3/8/1983	7.5		9/28/1982	7.2
4/5/1983	7		10/25/1982	7.2
5/4/1983	7		11/9/1982	7.3
12/13/1983	7		6/7/1983	6.8
2/28/1984	7.3		7/6/1983	7.4
3/14/1984	7.2		8/2/1983	7.8
4/10/1984	7.5		9/13/1983	7.3
5/8/1984	7.2		10/12/1983	7.4
1/16/1985	6.5		11/14/1983	7.2
2/14/1985	6.5		6/12/1984	7.9
3/5/1985	7		7/10/1984	7.4
5/14/1985	7.1		8/28/1984	8
12/10/1985	6.5		9/5/1984	7.8



Goose Creek Ambient Water pH (SU) Data (Sept '74-'May 08)

Winter (Dec-May)		Summer (June-Nov)	
1/7/1986	6.5	10/2/1984	--
2/1/1986	6.5	6/11/1985	7.5
3/4/1986	6.9	7/9/1985	6.9
4/2/1986	8.3	8/7/1985	7.7
5/13/1986	7.8	9/24/1985	6.4
4/7/1987	7.3	10/22/1985	6.7
5/5/1987	7.2	11/20/1985	6.9
12/21/1987	7.9	6/17/1986	7.1
1/28/1988	--	7/15/1986	6.4
3/8/1988	7.7	9/9/1986	7.4
4/26/1988	8.5	10/28/1986	7.1
5/24/1988	6.9	6/2/1987	7.9
1/11/1989	7.6	7/23/1987	7.81
2/8/1989	7.9	8/11/1987	7.7
3/9/1989	7.6	9/23/1987	7.3
4/11/1989	7.7	10/13/1987	7.9
5/9/1989	7.5	11/23/1987	7.8
12/7/1989	--	6/21/1988	7.46
1/4/1990	--	7/13/1988	--
2/8/1990	--	8/10/1988	8.2
3/13/1990	--	9/15/1988	7.8
4/11/1990	--	10/13/1988	7.4
5/7/1990	--	11/15/1988	7.2
12/11/1990	7.4	6/7/1989	--
1/22/1991	7.9	7/26/1989	--
2/12/1991	--	8/9/1989	7.7
3/6/1991	--	9/14/1989	7.6
4/3/1991	6.8	10/5/1989	7.9
5/1/1991	7.4	11/7/1989	7.6
12/11/1991	7	6/4/1990	--
1/2/1992	6.7	7/2/1990	7.4
2/3/1992	7.2	8/7/1990	7.4
3/4/1992	7	9/11/1990	7.6
4/7/1992	7.6	10/16/1990	--
5/6/1992	7.8	11/14/1990	7.4
12/2/1992	7.2	6/12/1991	7.1
1/12/1993	6.5	7/2/1991	7.5
2/3/1993	7.2	7/31/1991	--
3/3/1993	6.8	8/28/1991	7.5
4/7/1993	7	10/30/1991	6.7
5/6/1993	6.7	11/26/1991	6.8
1/26/1994	7.2	6/3/1992	7.6
2/2/1994	7.2	7/15/1992	7.2
3/22/1994	7	8/5/1992	6.9
4/13/1994	6.8	8/6/1992	--
5/18/1994	7	9/2/1992	7.4
12/7/1994	7.5	10/21/1992	7.5
1/4/1995	8.1	11/18/1992	7.5
2/1/1995	7.8	6/9/1993	6.5
3/1/1995	7.7	7/7/1993	7.2
4/4/1995	7.3	8/4/1993	6.8
5/3/1995	7.5	9/22/1993	7.6
12/7/1995	7.7	10/6/1993	7.2
2/8/1996	7.1	10/22/1993	--
3/7/1996	7.1	11/9/1993	7.6
4/3/1996	7.1	6/8/1994	7.4

Goose Creek Ambient Water pH (SU) Data (Sept '74-'May 08)

Winter (Dec-May)			Summer (June-Nov)	
5/8/1996	7.4		7/6/1994	7.3
12/3/1996	7.2		9/7/1994	7.8
1/7/1997	7.4		10/18/1994	7.5
2/4/1997	7.3		11/9/1994	7.9
3/27/1997	7.9		7/6/1995	--
4/8/1997	7.8		7/12/1995	7.6
5/6/1997	7.5		8/2/1995	7.9
12/2/1997	7.5		9/13/1995	7.5
1/14/1998	7.3		10/4/1995	7.2
2/3/1998	--		6/5/1996	7.3
3/3/1998	6.9		8/21/1996	6.5
4/1/1998	7.5		9/12/1996	6.8
12/15/1998	7.5		11/13/1996	7.2
1/5/1999	7.3		6/5/1997	7.2
2/2/1999	7.4		7/8/1997	7.2
3/9/1999	7.9		8/6/1997	7.4
4/6/1999	7		9/3/1997	7.5
5/5/1999	7.7		10/7/1997	7.5
12/29/1999	6.3		11/13/1997	7.3
3/1/2000	--		6/9/1998	7.7
4/4/2000	--		7/23/1998	6.2
5/2/2000	--		8/12/1998	7.1
12/11/2000	--		10/20/1998	7.1
1/23/2001	--		11/18/1998	7.2
2/6/2001	--		6/15/1999	7.8
3/29/2001	7.23		7/15/1999	7.2
4/3/2001	7.07		8/10/1999	7.1
5/1/2001	7.48		9/7/1999	--
12/12/2001	7.09		9/8/1999	--
1/24/2002	7.11		10/25/1999	7.6
2/7/2002	6.9		11/29/1999	7.4
3/21/2002	7.12		6/5/2000	7.5
4/10/2002	7.57		7/10/2000	7.24
5/9/2002	7.31		8/1/2000	7.41
1/29/2007	7.5		9/7/2000	7.37
3/13/2007	7.5		10/10/2000	7.63
5/14/2007	7.6		11/1/2000	--
1/28/2008	8.4		6/6/2001	7.42
3/26/2008	8.8		9/25/2001	6.97
5/8/2008	7.5		10/11/2001	7.15
			11/15/2001	7.24
			6/5/2002	7.28
			7/2/2002	7.03
			7/31/2007	7.6
			9/5/2007	7.3
			11/6/2007	7.5

90th Percentile =

7.9

90th Percentile =

7.864



Goose Creek Ambient Water Hardness Data (Sept '74-'May 08)

Winter (Dec-May)		Summer (June - November)	
12/21/1987	44	11/14/1983	0.45
3/8/1988	42	7/23/1987	54
4/26/1988	40	8/11/1987	55
5/24/1988	37	9/23/1987	50
1/11/1989	56	10/13/1987	52
2/8/1989	52	11/23/1987	50
3/9/1989	48	6/21/1988	42
4/11/1989	46	7/13/1988	38
5/9/1989	40	8/10/1988	40
12/7/1989	48	9/15/1988	60
1/4/1990	48	10/13/1988	56
2/8/1990	47	11/15/1988	58
4/11/1990	44	6/7/1989	48
5/7/1990	46	7/26/1989	48
12/11/1990	50	8/9/1989	50
1/22/1991	40	9/14/1989	50
2/12/1991	44	10/5/1989	52
3/6/1991	40	11/7/1989	56
4/3/1991	40	6/4/1990	48
5/1/1991	42	7/2/1990	48
12/11/1991	44	8/7/1990	46
1/2/1992	56	9/11/1990	58
2/3/1992	48	10/16/1990	52
2/5/1992	52	11/14/1990	52
3/4/1992	50	6/12/1991	50
4/7/1992	42	7/2/1991	53
5/6/1992	50	8/28/1991	42
12/2/1992	45	10/30/1991	82
1/12/1993	46	11/26/1991	60
3/3/1993	42	6/3/1992	48
4/7/1993	36	7/15/1992	50
5/6/1993	42	8/5/1992	54
2/2/1994	38	9/2/1992	52
3/22/1994	46	10/21/1992	54
4/13/1994	40	11/18/1992	50
5/18/1994	43	6/9/1993	40
12/7/1994	48	7/7/1993	46
1/4/1995	50	8/4/1993	54
2/1/1995	46	9/22/1993	62
3/1/1995	44	9/22/1993	62
4/4/1995	42	10/6/1993	58
5/3/1995	46	10/22/1993	62
12/7/1995	47	11/9/1993	68
2/8/1996	40	1/26/1994	40
3/7/1996	40	6/8/1994	48
4/3/1996	46	7/6/1994	52
5/8/1996	42	9/7/1994	53
12/3/1996	38	10/18/1994	55
1/7/1997	43	11/9/1994	54
2/4/1997	41.3	7/12/1995	45
3/27/1997	41.4	8/2/1995	68
5/6/1997	46.9	9/13/1995	56
2/3/1998	39.5	10/4/1995	54
3/3/1998	38	6/5/1996	50
4/1/1998	36.4	8/21/1996	48



Goose Creek Ambient Water Hardness Data (Sept '74-'May 08)

Winter (Dec-May)		Summer (June - November)	
12/15/1998	67	9/12/1996	44
2/2/1999	56	11/13/1996	47
3/9/1999	56	6/5/1997	52
4/6/1999	44	7/8/1997	50.8
5/5/1999	50	8/6/1997	42.9
12/29/1999	46.4	9/3/1997	53
3/1/2000	47	10/7/1997	56.3
4/4/2000	14	11/13/1997	37.9
5/2/2000	23	11/18/1998	61
12/11/2000	46.4	6/15/1999	50.4
1/23/2001	51.4	7/15/1999	47.2
2/6/2001	49.3	8/10/1999	49.2
3/29/2001	27.3	9/8/1999	35.2
4/3/2001	26	11/29/1999	42.3
5/1/2001	26.4	6/5/2000	63
12/12/2001	49	7/10/2000	61
1/24/2002	50.6	8/1/2000	46.1
2/7/2002	45.8	9/7/2000	49.2
3/21/2002	57.2	10/10/2000	53.1
4/10/2002	56	11/1/2000	55.3
5/9/2002	51.7	6/6/2001	45.8
		9/25/2001	20.1
		10/11/2001	51.2
		11/15/2001	33.8
		6/5/2002	59.3
		7/2/2002	54.4

Average = 44.34210526      Average = 50.55493827

## Define Point of Interest

39,00,20.9 -77,44,37.9

is the Search Point

## Search Point

☒ Change to "clicked" map point☐ Fixed at 39,00,20.9 - 77,44,37.9

## Show Position Rings

☒ Yes ☐ No

1 mile and 1/4 mile at the Search Point

## Show Search Area

☒ Yes ☐ No

2 miles

Search Point is at map center


## Base Map Choices

Topography

## Map Overlay Choices

Current List: Position, Search

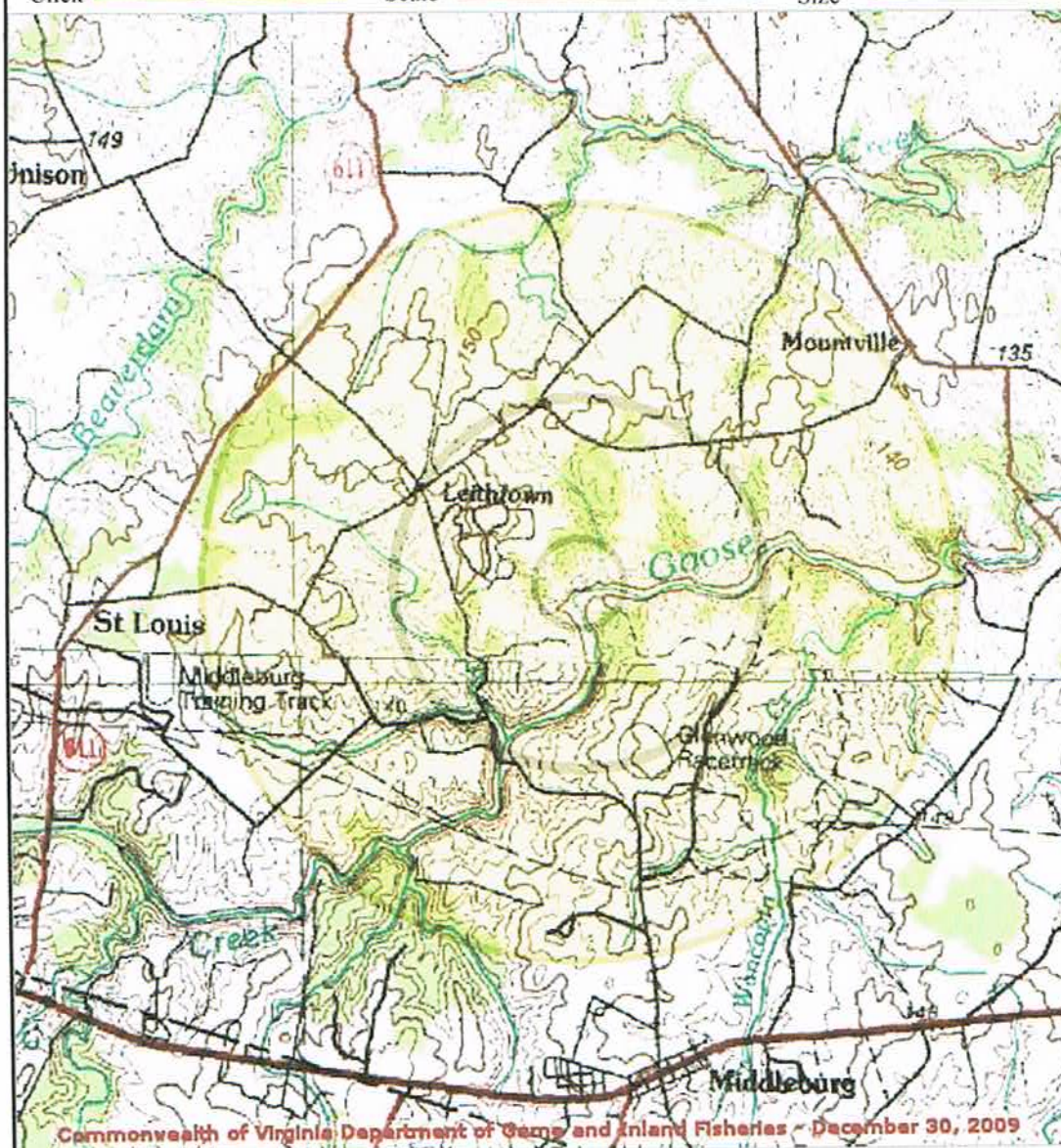
## Map Overlay Legend

 Position Rings  
1 mile and 1 1/4 mile at the Search Point 2 mile radius Search Area

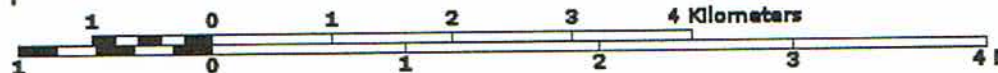
Map Click

Map Scale

Screen Size



N



Point of Search 39,00,20.9 -77,44,37.9

Map Location 39,00,20.9 -77,44,37.9

Attachment 8

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude☐ Decimal Degrees Latitude - Longitude



☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [terraserver-usa.com](http://terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 257615 and top 4325817. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 60 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet to west by 31501 feet north to south for a total of 35.5 square miles.

Black and white aerial photography acquired near 1990 and topographic maps are from the United States Department of the Interior, United States Geological Survey.

Shaded topographic maps are from TOPO! ©2006 National Geographic

<http://www.nationalgeographic.com/topo>

Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries

map assembled 2009-12-30 10:53:18 (qa/qc July 27, 2009 10:09 - tn=272722 dist=32181)

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# Virginia Department of Game and Inland Fisheries

12/30/2009 11:07:29 AM

## Fish and Wildlife Information Service

### VaFWIS Initial Project Assessment Report

Compiled on

[Help](#)

12/30/2009, 11:07:29 AM

Known or likely to occur within a 2 mile radius of 39,00,20.9

77,44,37.9

in 107 Loudoun County, VA

438 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 31) (31 species with Status\* or Tier I\*\*)

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>	<a href="#">Confirmed</a>	<a href="#">Database(s)</a>
030062	ST	I	<a href="#">Turtle, wood</a>	Glyptemys insculpta		BOVA
040129	ST	I	<a href="#">Sandpiper, upland</a>	Bartramia longicauda		BOVA
040293	ST	I	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	Ammodramus henslowii		BOVA
040093	FSST	II	<a href="#">Eagle, bald</a>	Haliaeetus leucocephalus		BOVA
060081	ST	II	<a href="#">Floater, green</a>	Lasmigona subviridis	<a href="#">Yes</a>	TEWaters,BOVA
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
100248	FS	I	<a href="#">Fritillary, regal</a>	Speyeria idalia idalia		BOVA
100166	FS	II	<a href="#">Skipper, Dotted</a>	Hesperia attalus slossonae		BOVA
040372	SS	I	<a href="#">Crossbill, red</a>	Loxia curvirostra		BOVA
040306	SS	I	<a href="#">Warbler, golden-winged</a>	Vermivora chrysoptera		BOVA
040213	SS	II	<a href="#">Owl, northern saw-whet</a>	Aegolius acadicus		BOVA
040266	SS	II	<a href="#">Wren, winter</a>	Troglodytes troglodytes		BOVA
030063	CC	III	<a href="#">Turtle, spotted</a>	Clemmys guttata		BOVA
040094	SS	III	<a href="#">Harrier, northern</a>	Circus cyaneus		BOVA
040036	SS	III	<a href="#">Night-heron, yellow-crowned</a>	Nyctanassa violacea violacea		BOVA
040204	SS	III	<a href="#">Owl, barn</a>	Tyto alba pratincola		BOVA
030012	CC	IV	<a href="#">Rattlesnake, timber</a>	Crotalus horridus		BOVA
040264	SS	IV	<a href="#">Creeper, brown</a>	Certhia americana		BOVA
040364	SS		<a href="#">Dickcissel</a>	Spiza americana		BOVA
040366	SS		<a href="#">Finch, purple</a>	Carpodacus purpureus		BOVA

040285	SS		<a href="#">Kinglet, golden-crowned</a>	Regulus satrapa	BOVA
040112	SS		<a href="#">Moorhen, common</a>	Gallinula chloropus cachinnans	BOVA
040262	SS		<a href="#">Nuthatch, red-breasted</a>	Sitta canadensis	BOVA
040210	SS		<a href="#">Owl, long-eared</a>	Asio otus	BOVA
040189	SS		<a href="#">Tern, Caspian</a>	Sterna caspia	BOVA
040278	SS		<a href="#">Thrush, hermit</a>	Catharus guttatus	BOVA
040314	SS		<a href="#">Warbler, magnolia</a>	Dendroica magnolia	BOVA
050045	SS		<a href="#">Otter, northern river</a>	Lontra canadensis lataxina	BOVA
040225		I	<a href="#">Sapsucker, yellow-bellied</a>	Sphyrapicus varius	BOVA
040319		I	<a href="#">Warbler, black-throated green</a>	Dendroica virens	BOVA

To view **All 438 species** [View 438](#)

\* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern

\*\* I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

### Anadromous Fish Use Streams

N/A

### Colonial Water Bird Survey

N/A

### Threatened and Endangered Waters ( 1 Reaches )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Goose Creek (02070008)</a>	ST	060081	ST	II	<a href="#">Floater, green</a>	Lasmigona subviridis	<a href="#">Yes</a>

### Cold Water Stream Survey (Trout Streams) Managed Trout Species



1/13/2010 1:16:10 PM

Facility = Foxcroft School (Winter December - May)  
Chemical = Ammonia  
Chronic averaging period = 30  
WLAa = 640  
WLAc = 280  
Q.L. = .2  
# samples/mo. = 4  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:



1/13/2010 1:21:01 PM

Facility = Foxcroft School (Summer June - November)  
Chemical = Ammonia  
Chronic averaging period = 30  
WLAa = 23  
WLAc = 9.1  
Q.L. = .2  
# samples/mo. = 4  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 18.3607978500884  
Average Weekly limit = 18.3607978500884  
Average Monthly Limit = 12.5537497639643

The data are:

Date : 12/11/03

## Criteria and WLA Calculations for Ammonia based upon freshwater criteria (Nontidal Only)

Facility : Foxcroft School STP

Permit Number : VAO024112

Comments : Winter (December - May)

pH	=	7.50	S.U.
Temperature	=	15.00	C
Trout Present (Y or N)	=	N	
Early Life Stages Present (Y or N)	=	Y	
1Q10	=	6.950	MGD
7Q10	=	8.920	MGD
30Q10	=	0.10	MGD
Harmonic Mean	=	0.00	MGD
Design Flow	=	0.08	MGD
Percentage of 1Q10 by MIX exe	=	100.00%	NA MGD
Percentage of 7Q10 by MIX exe	=	100.00%	NA MGD
Water Body Tier	=	1	(1=No Antideg, 2= Antideg)

## Acute - Trout Present

$$\text{Calculated Ammonia Criteria} = (0.275 / 1 + 10^{(7.50-10)}) + (39 / 1 + 10^{(15.00-20)})$$

$$\text{Calculated Ammonia Criteria} = 13.28$$

## Acute - Trout Absent

$$\text{Calculated Ammonia Criteria} = (0.411 / 1 + 10^{(7.50-10)}) + (58.4 / 1 + 10^{(15.00-20)})$$

$$\text{Calculated Ammonia Criteria} = 19.89$$

$$\text{Total Acute Ammonia Criteria} = 19.89 \text{ mg/l as N}$$

## Chronic - Early Life Stages Present

$$\text{Calculated Ammonia Criteria MIN} = ((0.0577 / 1 + 10^{(7.50-10)}) + (2.487 / 1 + 10^{(15.00-20)})) \times 2.85 \text{ or } 1.45 \times 10(0.028(25\text{-temp})), \text{ whichever is less}$$

$$\text{Calculated MIN} = 2.76$$

$$\text{MIN Comparison} = 2.76$$

Calculated value is less than 2.85

$$\text{Calculated Ammonia Criteria} = 4.23$$

## Chronic - Early Life Stages Absent

$$\text{Calculated Ammonia Criteria MAX} = ((0.0577 / 1 + 10^{(7.50-10)}) + (2.487 / 1 + 10^{(15.00-20)})) \times (\text{Temp. in C or 7, whichever is greater})$$

$$\text{MAX Comparison} = 15.00$$

Temperature value enter will be used

$$\text{Calculated Ammonia Criteria} = 4.23$$

$$\text{Total Chronic Ammonia Criteria} = 4.23 \text{ mg/l as N}$$

Parameters	Instream Background	Acute Criteria (mg/l)	Acute Baseline (mg/l)	Acute WLA (mg/l)	Antideg Acute WLA (mg/l)	SSTV = 0.4 X aWLA (mg/l)	Chronic Criteria (mg/l)	Chronic Baseline (mg/l)	Chronic WLA (mg/l)	Antideg Chronic WLA (mg/l)	SSTV = 0.6 X cWLA (mg/l)
Ammonia	ND	19.89	NA	1836.53	NA	734.61	4.23	NA	507.40	NA	304.44

Notes:

- 1) ND = No Data available, and therefore the background concentrations are assumed to be Zero.
- 2) Acute Criteria = One-hour average concentration of total ammonia nitrogen in freshwater shall not exceed, more than once every three years on the average.
- 3) Chronic Criteria = the 30-day average concentration of total ammonia nitrogen where early life stages of fish are present in freshwater shall not exceed, more than once every three years on the average.
- 4) Acute criteria/WLA based on 1Q10 flow; chronic criteria/WLA based on 7Q10 flow.

## Criteria and WLA Calculations for Ammonia based upon freshwater criteria (Nontidal Only)

Date : 12/11/03

Facility : Foxcroft School STP

Permit Number : VA0024112

Comments : Summer (June - November)

	pH	=	7.50	S.U.
Temperature	=	24.00	C	
Trout Present (Y or N)	=	N		
Early Life Stages Present (Y or N)	=	Y		
1Q10	=	0.000	MGD	
7Q10	=	0.000	MGD	
30Q10	=	0.10	MGD	
Harmonic Mean	=	0.00	MGD	
Design Flow	=	0.08	MGD	
Percentage of 1Q10 by MIX exe	=	100.00%	NA	MGD
Percentage of 7Q10 by MIX exe	=	100.00%	NA	MGD
Water Body Tier	=	1		(1=No Antibody, 2= Antibody)

## Acute - Trout Present

$$\text{Calculated Ammonia Criteria} = (0.275 / 1 + 10^{(7.204 - pH)}) + (39 / 1 + 10^{(4.17 - 200)})$$

$$\text{Calculated Ammonia Criteria} = 13.28$$

## Acute - Trout Absent

$$\text{Calculated Ammonia Criteria} = (0.411 / 1 + 10^{(7.204 - pH)}) + (58.4 / 1 + 10^{(4.17 - 200)})$$

$$\text{Calculated Ammonia Criteria} = 19.89$$

Total Acute Ammonia Criteria = 19.89 mg/l as N

## Chronic - Early Life Stages Present

$$\text{Calculated Ammonia Criteria MIN} = ((0.0577 / 1 + 10^{(7.000 - pH)}) + (2.487 / 1 + 10^{(4.17 - 000)})) \times 2.85 \text{ or } 1.45 \times 10(0.028/(25 - \text{temp})), \text{ whichever is less}$$

$$\text{Calculated MIN} = 1.55$$

$$\text{MIN Comparison} = 1.55$$

$$\text{Calculated Ammonia Criteria} = 2.37$$

Calculated value is less than 2.85

## Chronic - Early Life Stages Absent

$$\text{Calculated Ammonia Criteria MAX} = ((0.0577 / 1 + 10^{(7.000 - pH)}) + (2.487 / 1 + 10^{(4.17 - 000)})) \times (\text{Temp. in C or 7, whichever is greater})$$

$$\text{MAX Comparison} = 24.00$$

$$\text{Calculated Ammonia Criteria} = 2.37$$

Temperature value enter will be used

Total Chronic Ammonia Criteria = 2.37 mg/l as N

Parameters	Instream Background	Acute Criteria (mg/l)	Acute Baseline (mg/l)	Acute WLA (mg/l)	Antideg Acute WLA (mg/l)	SSTV = 0.4 X aWLA (mg/l)	Chronic Criteria (mg/l)	Chronic Baseline (mg/l)	Chronic WLA (mg/l)	Antideg Chronic WLA (mg/l)	SSTV = 0.6 X cWLA (mg/l)
Ammonia	ND	19.89	NA	19.89	NA	7.96	2.37	NA	2.37	NA	1.42

## Notes:

1) ND = No Data available, and therefore the background concentrations are assumed to be Zero.

2) Acute Criteria = One-hour average concentration of total ammonia nitrogen in freshwater shall not exceed, more than once every three years on the average.

3) Chronic Criteria = the 30-day average concentration of total ammonia nitrogen where early life stages of fish are present in freshwater shall not exceed, more than once every three years on the average

4) Acute criteria/WLA based on 1Q10 flow; chronic criteria/WLA based on 7Q10 flow.



Facility = Foxcroft School STP  
 Chemical = Ammonia as N (Summer)  
 Chronic averaging period = 30  
 WLAa = 19.89  
 WLAc = 2.37  
 Q.L. = 0.2  
 # samples/mo. = 4  
 # samples/wk. = 1

#### Summary of Statistics:

# observations = 1  
 Expected Value = 10  
 Variance = 36  
 C.V. = 0.6  
 97th percentile daily values = 24.3341  
 97th percentile 4 day average = 16.6379  
 97th percentile 30 day average = 12.0605  
 # < Q.L. = 0  
 Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
 Maximum Daily Limit = 4.78187812139666  
 Average Weekly limit = 4.78187812139666  
 Average Monthly Limit = 3.2694930703951

The data are:

Public Notice – Environmental Permit

**PURPOSE OF NOTICE:** To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

**PUBLIC COMMENT PERIOD:** XXX, 2010 to 5:00 p.m. on XXX, 2010

**PERMIT NAME:** Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

**APPLICANT NAME, ADDRESS AND PERMIT NUMBER:** Foxcroft School, P. O. Box 5555, Middleburg, Virginia 20118, VA0024112

**NAME AND ADDRESS OF FACILITY:** Foxcroft School Wastewater Treatment Plant, 22407 Foxhound Lane, Middleburg, Virginia 20118

**PROJECT DESCRIPTION:** Foxcroft School has applied for a reissuance of a permit for the private Foxcroft School Wastewater Treatment Plant. The applicant proposes to release treated sewage from private school at a rate of 0.075 million gallons per day into a water body. The sludge will be disposed by hauling it to the Loudoun County manhole F-17 located on Route 697 just off of Route 7 in Ashburn, Virginia. Loudoun County Sanitation Authority accepts sludge at this location for ultimate disposal at the Blue Plains Wastewater Treatment Plant in Washington, D.C. The facility proposes to release the treated sewage in the Goose Creek in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD<sub>5</sub>, Total Suspended Solids, Ammonia as N, *E.coli* Bacteria, and Dissolved Oxygen

**HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:** DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

**CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:** The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Foxcroft School Wastewater Treatment Plant
NPDES Permit Number:	VA0024112
Permit Writer Name:	Joan C. Crowther
Date:	January 5, 2010

**Major** [ ]**Minor** [x ]**Industrial** [ ]**Municipal** [x ]**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?		X	
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet <b>or</b> permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet <b>or</b> permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water? 3 parameters: bacteria, benthic, and PCB	X		
a. Has a TMDL been developed and approved by EPA for the impaired water? Not for PCB	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit? Not for PCB	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? Bacteria, TSS	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	



<b>I.B. Permit/Facility Characteristics – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A

5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

<b>II.E. Monitoring and Reporting Requirements</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

<b>II.F. Special Conditions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?		X	


<b>II.F. Special Conditions – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?		X	
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?		X	
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?		X	

II.G. Standard Conditions			Yes	No	N/A
1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?			X		
<b>List of Standard Conditions – 40 CFR 122.41</b>					
Duty to comply	Property rights	Reporting Requirements			
Duty to reapply	Duty to provide information	Planned change			
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance			
not a defense	Monitoring and records	Transfers			
Duty to mitigate	Signatory requirement	Monitoring reports			
Proper O & M	Bypass	Compliance schedules			
Permit actions	Upset	24-Hour reporting			
		Other non-compliance			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?				X	



**Part III. Signature Page**

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Joan C. Crowther</u>
Title	<u>VPDES Permit Writer</u>
Signature	<u></u>
Date	<u>January 5, 2010</u>